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BIOLOGIA

CENTRALI-AMERICANA;

OR,

CONTRIBUTIONS TO THE KNOWLEDGE

OF THE

FAUNA AND FLORA

OF

MEXICO AND CENTRAL AMERICA.

EDITED BY

F. DUCANE GODMAN AND OSBERT SALVIN.

BOTANY.

VOL. III.

BY

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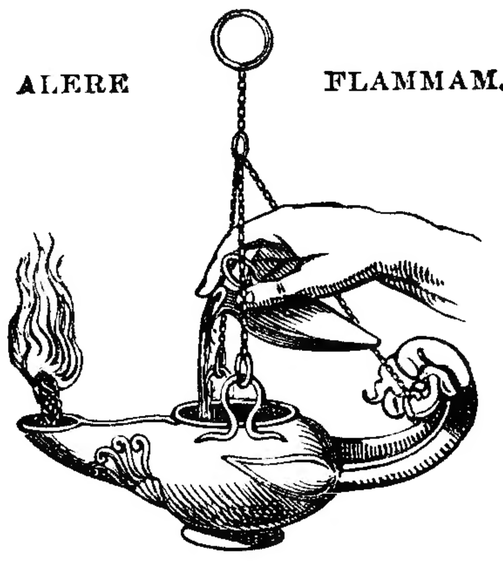
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CONTENTS OF VOLUME III.

Page

Enumeration of the INCOMPLETÆ, MONOCOTYLEDONES, and CRYPTOGAMIC VASCULARES, with Descriptions of New Species 1–711

BIOLOGIA CENTRALI-AMERICANA.

BOTANICA.

PHANEROGAMIA.

DICOTYLEDONES.

INCOMPLETÆ.

Series I. CURVEMBRYEÆ.

Order CVI. NYCTAGINEÆ.

Nyctagineæ, Benth. et Hook. Gen. Plant. iii. p. 1.

Twenty-three genera are referred to this Order; and the number of species is estimated at about 220. They are generally dispersed in tropical and subtropical countries, most numerous in America, rare in Australia, and very rare in Africa.

1. MIRABILIS.

Mirabilis, Linn. Gen. Plant. n. 242; Benth. et Hook. Gen. Plant. iii. p. 3.

About ten herbaceous species, inhabiting the warmer parts of America.

1. **Mirabilis coccinea,** Benth. et Hook. f. Gen. Plant. iii. p. 3.

Oxybaphus coccineus, Torr. Bot. U.S. & Mex. Bound. Surv. p. 169.

Texas; New Mexico; Arizona.—North Mexico, Sonora (*Smith*). Hb. Kew.

2. **Mirabilis dichotoma,** Linn.; Choisy in DC. Prodr. xiii. 2, p. 428.

Mexico. Introduced in other countries.

3. **Mirabilis hybrida,** Lepel. in Ann. Mus. Par. viii. p. 481; DC. Prodr. xiii. 2, p. 428; H. B. K. Nov. Gen. et Sp. ii. p. 212.

South Mexico, Oaxaca.—Colombia.

This and *M. dichotoma*, Linn., should perhaps be referred to *M. jalapa*, Linn.

4. **Mirabilis jalapa,** Linn. Sp. Pl. p. 252; Choisy in DC. Prodr. xiii. 2, p. 427; Lam. Ill. Pl. t. 105; Bot. Mag. t. 371.

Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 775); South Mexico, Orizaba (*Botteri*, 776, 777), valley of Mexico (*Bour-*

geau, 541); GUATEMALA, Dueñas, 5000 feet (*Salvin*); NICARAGUA, Realejo (*Sinclair*). Hb. Kew.

Naturalized in most warm countries.

5. **Mirabilis longiflora,** Linn. Sp. Pl. p. 252; DC. Prodr. xiii. 2, p. 428; Sm. Exot. Bot. t. 23.

Mirabilis suaveolens, H. B. K. Nov. Gen. et Sp. ii. p. 213?

SOUTH MEXICO, Zimapan (*Coulter*, 1336), Misteca Alta, at 7000 feet (*Galeotti*, 575). Hb. Kew.

6. **Mirabilis multiflora,** A. Gr. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 173; Watson, Bot. Calif. ii. p. 2; Bot. Mag. t. 6266.

Oxybaphus multiflorus, Torr. in Ann. Lyc. N. York, ii. p. 237.

Quamoclidion multiflorum, Torr. in Am. Journ. Sc. ser. 2, xv. p. 321.

Nyctaginia? torreyana, Choisy in DC. Prodr. xiii. 2, p. 430.

NEW MEXICO to COLORADO and CALIFORNIA.—NORTH MEXICO, Zacatecas (*Coulter*, 1327)? Hb. Kew.

The Mexican locality is a little doubtful.

7. **Mirabilis triflora,** Benth. Pl. Hartw. p. 23.

Quamoclidion nyctagineum, Choisy in DC. Prodr. xiii. 2, p. 429.

SOUTH MEXICO, Bolaños (*Hartweg*). Hb. Kew.

2. OXYBAPHUS.

Oxybaphus, Vahl, Enum. ii. p. 39; Benth. et Hook. Gen. Plant. iii. p. 4.

Calyxhymenia, Ort. Dec. i. p. 5, t. 1.

Calymenia, Pers. Syn. i. p. 36.

A genus of about twenty species, inhabiting America, both north and south. One also occurs in the Himalayas, where, however, it may have been introduced.

1. **Oxybaphus aggregatus,** Vahl, Enum. ii. p. 41; Choisy in DC. Prodr. xiii. 2, p. 433.

Mirabilis aggregata, Cav. Ic. Pl. t. 437.

Calyxhymenia aggregata, Ort. Dec. vii. p. 81, t. 11.

Allionia aggregata, Spreng. Syst. i. p. 384.

TEXAS.—NORTH MEXICO, Chihuahua (ex *Torrey*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 768); SOUTH MEXICO, valley of Mexico (*Schaffner*, 18; *Bourgeau*, 651). Hb. Kew.

2. **Oxybaphus angustifolius,** Sweet, Hort. Brit. ed. 2, p. 429; Choisy in DC. Prodr. xiii. 2, p. 433; Torr. Bot. U.S. & Mex. Bound. Surv. p. 169.

Upper MISSOURI to ROCKY MOUNTAINS and southward to LOUISIANA and TEXAS.—NORTH MEXICO, Chihuahua (ex *Torrey*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 767). Hb. Kew.

3. **Oxybaphus cervantesii,** Sweet, Brit. Fl. Gard. t. 84; DC. Prodr. xiii. 2, p. 432.

Calyxhymenia cervantesii, Desf. Cat. Hort. Par. ed. 3, p. 390.
Allionia cervantesii, Steud. Nomencl. Bot.

MEXICO. Cultivated specimens only in Kew herbarium.

4. **Oxybaphus cordifolius,** Kunze, ex Choisy in DC. Prodr. xiii. 2, p. 432.

MEXICO? (ex *Choisy*).—CHILI.

5. **Oxybaphus glabrifolius,** Vahl, Enum. ii. p. 40; DC. Prodr. xiii. 2, p. 431.

Mirabilis corymbosa, Cav. Ic. Pl. iv. p. 55, t. 379.
Calyxhymenia glabrifolia, Ort. Dec. i. p. 5, t. 1.
Calymenia corymbosa, Pers. Ench. i. p. 37.

TEXAS; NEW MEXICO.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 769); SOUTH MEXICO, Aguas Calientes (*Hartweg*), without locality (*Bates*). Hb. Kew.

6. **Oxybaphus ovatus,** Vahl, Enum. ii. p. 40; Choisy in DC. Prodr. xiii. 2, p. 431.

MEXICO? (ex *Choisy*).—PERU.

7. **Oxybaphus violaceus,** Choisy in DC. Prodr. xiii. 2, p. 432.

Allionia violacea, Linn. Sp. Pl. p. 147.

SOUTH MEXICO, Tehuantepec (*Andrieux*, 127).—COLOMBIA to PERU. Hb. Kew.

8. **Oxybaphus wrightii,** Hemsley.

Quamoclidion oxybaphoides, A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 320.

TEXAS.—NORTH MEXICO, Chiricahui mountains (*Wright*). Hb. Kew.

9. **Oxybaphus viscosus,** L'Hérit.; Willd. Sp. Pl. i. p. 185; Choisy in DC. Prodr. xiii. 2, p. 430; Bot. Mag. t. 434.

Mirabilis viscosa, Cav. Ic. Pl. i. t. 19.
Calyxhymenia viscosa, Ort. Dec. i. p. 6.
Calymenia viscosa, Pers. Ench. i. p. 36.

NORTH MEXICO, Sierra Madre (*Palmer*, 1111); SOUTH MEXICO, Real del Monte to Zacatecas (*Coulter*, 1427), Tehuacan (*Liebmann*), Puebla (*Andrieux*, 126).—Southward to PERU. Hb. Kew.

3. NYCTAGINIA.

Nyctaginia, Choisy in Mém. Soc. Phys. Gen. xii. p. 167, t. 1, et in DC. Prodr. xiii. 2, p. 429; Benth. et Hook. Gen. Plant. iii. p. 4.

An annual monotype.

1. **Nyctaginia capitata,** Choisy in Mém. Soc. Phys. Gen. xii. p. 167, t. 1, et in DC. Prodr. xiii. 2, p. 429.

Nyctaginia ovata, Choisy, loc. cit.

TEXAS.—NORTH MEXICO, Chihuahua (*Potts*), without locality (*Gregg*). Hb. Kew.

4. ALLIONIA.

Allionia, Linn. Gen. Plant. n. 117, non Loefl.; Benth. et Hook. Gen. Plant. iii. p. 4.
Wedelia, Linn. in Loefl. It. p. 180.

An herbaceous monotype.

1. **Allionia incarnata,** Linn. Sp. Pl. p. 147; DC. Prodr. xiii. 2, p. 434; Lam. Ill. t. 58; L'Hér. Stirp. t. 31.
Allionia malacoides, Benth. Bot. Voy. 'Sulphur,' p. 44.

Texas to California.—North Mexico, Sonora Alta (*Coulter*, 1260), Chihuahua (*Potts*), Monterey (*Eaton & Edwards*); South Mexico, Tacubaya (*Schaffner*, 16), Guadaloupe, valley of Mexico (*Bourgeau*, 293); Chapultepec (*Bilimek*, 167).—Venezuela to Chili and Argentina. Hb. Kew.

5. BOERHAAVIA.

Boerhaavia, Linn. Gen. Plant. n. 9 (*Boerhavia*); Benth. et Hook. Gen. Plant. iii. p. 5.

A genus of about thirty herbaceous and half-shrubby species, widely dispersed in warm countries.

1. **Boerhaavia anisophylla,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 171.
Texas or North Mexico, on the Rio Grande (ex *Torrey*).

2. **Boerhaavia erecta,** Linn.; DC. Prodr. xiii. 2, p. 450; Griseb. Fl. Brit. W. Ind. p. 69; Jacq. Hort. Vindob. tt. 5 et 6.

Georgia to New Mexico.—North Mexico, Chihuahua (ex *Torrey*), Monterey (*Eaton & Edwards*); South Mexico, Cordilleras of Vera Cruz and Oaxaca (*Galeotti*, 580, 2558); Guatemala, Mazatenango (*Bernoulli*, 587).—West Indies. Hb. Kew.

3. **Boerhaavia eriosolena,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 322.
North Mexico, valley near Azufrora in Coahuila or Durango (*Gregg*, 512). Hb. Kew.

4. **Boerhaavia hirsuta,** Willd. Phytog. i. n. 3; Choisy in DC. Prodr. xiii. 2, p. 451; Griseb. Fl. Brit. W. Ind. p. 69; Jacq. Hort. Vindob. t. 7.

Texas.—Mexico (ex *Choisy*); Panama? (*S. Hayes*, 732).—West Indies; Guiana; Galapagos. Hb. Kew.

5. **Boerhaavia leiosolena,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 172.
Texas or North Mexico, on the Rio Grande (*Parry*).

6. **Boerhaavia linearifolia,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 322.
Texas.—North Mexico, Saltillo (*Gregg*, 110), Sierra Madre (*Palmer*, 1121). Hb. Kew.

7. **Boerhaavia paniculata,** Rich.; Choisy in DC. Prodr. xiii. 2, p. 450; Griseb. Fl. Brit. W. Ind. p. 69.

Texas.—New Mexico, North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 770), Zacatecas (*Hartweg*, 45); South Mexico, Zimapan (*Coulter*, 1429, 1430); Panama (ex *Grisebach*).—West Indies; Galapagos. Hb. Kew.

8. **Boerhaavia purpurascens,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 321.

Texas; New Mexico.—North Mexico, Santa Rita, within the old boundary. Hb. Kew.

9. **Boerhaavia scandens,** Linn. Sp. Pl. p. 4; Choisy in DC. Prodr. xiii. 2, p. 454; Griseb. Fl. Brit. W. Ind. p. 69; Jacq. Hort. Vindob. i. t. 4.

Boerhaavia grahami, A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 323?

New Mexico; Arizona.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 772), Sonora (*Wright; Schott*); South Mexico, Cordillera of Oaxaca, 3000 feet (*Galeotti*, 7152), Campeachy (*Linden*).—Colombia to Peru; Galapagos; West Indies. Hb. Kew.

10. **Boerhaavia virgata,** H. B. K. Nov. Gen. et Sp. ii. p. 215; DC. Prodr. xiii. 2, p. 450; Linnæa, v. p. 92.

South Mexico, near Vera Cruz (*Schiede & Deppe*).—Venezuela.

11. **Boerhaavia viscosa,** Lag. et Rodr.; Choisy in DC. Prodr. xiii. 2, p. 452.

Texas; New Mexico.—North Mexico, Chihuahua (*Potts*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 770½); South Mexico, Tizapan, valley of Mexico (*Bourgeau*, 180), Tacubaya (*Schaffner*), Tehuacan, at 5000 feet (*Galeotti*, 581); Guatemala, Dueñas (*Salvin*). Hb. Kew.

12. **Boerhaavia wrightii,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 322.

New Mexico.—North Mexico, near Mesillas (*Gregg*, 533). Hb. Kew.

6. SENKENBERGIA.

Senkenbergia, Schauer in Linnæa, xix. p. 711; Benth. et Hook. Gen. Plant. iii. p. 5.

Herbs. Four species, whereof three inhabit Mexico and one Lower California.

1. **Senkenbergia annulata,** Schauer in Linnæa, xix. p. 711.

Senkenbergia gypsophiloides, Benth. et Hook. Gen. Plant. iii. p. 5.
Lindenia gypsophiloides, Mart. et Gal. in Bull. Acad. Brux. x. 2, p. 357.
Tinantia gypsophiloides, Mart. et Gal. loc. cit. xi. 1, p. 240.
Boerhaavia gibbosa, Pav., ex A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 323.

North Mexico, Juarez, about 100 miles north of Monclova (*Palmer*, 1125), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 771); South Mexico, Tehuacan, 5000 feet (*Galeotti*, 577), Zimapan (*Coulter*, 1434). Hb. Kew.

2. **Senkenbergia coulteri,** Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 6.

North Mexico, Sonora Alta (*Coulter*, 1425). Hb. Kew.

This may be *Boerhaavia spicata*, Choisy, not *B. erecta*, Choisy, as erroneously cited in the 'Genera Plantarum.'

3. **Senkenbergia,** sp.

NORTH MEXICO, Sonora Alta (*Coulter*, 1424). Hb. Kew.

There are only flowers of this species; and as it is uncertain which of the species, if either, is the same as *Boerhaavia spicata*, Choisy, we leave it without a name at present.

7. ACLEISANTHES.

Acleisanthes, A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 259; Benth. et Hook. Gen. Plant. iii. p. 6.

Herbs or half-shrubs, inhabiting the Texano-Mexican region. About six species are known.

1. **Acleisanthes anisophylla,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 261.

TEXAS.—NORTH MEXICO, along the Rio Grande (*Schott*).

2. **Acleisanthes berlandieri,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 260.

TEXAS.—NORTH MEXICO, near Monterey and Matamoros (*Gregg*). Hb. Kew.

3. **Acleisanthes longiflora,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 260; Torr. Bot. U.S. & Mex. Bound. Surv. t. 46.

TEXAS.—NORTH MEXICO, Parras, Coahuila (*Palmer*, 1116), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 774), without locality (*Gregg*). Hb. Kew.

4. **Acleisanthes wrightii,** Benth. et Hook. Gen. Plant. iii. p. 6.

Pentacrophys wrightii, A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 261; Torr. Bot. U.S. & Mex. Bound. Surv. t. 47 B.

TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 773). Hb. Kew.

8. SELINOCARPUS.

Selinocarpus, A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 262; Benth. et Hook. Gen. Plant. iii. p. 6.

Herbs or half-shrubs, restricted to the Texano-Mexican region. Four species are known.

1. **Selinocarpus angustifolia,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 170, t. 47 A.

TEXAS.—NORTH MEXICO, San Lorenzo de Laguna, Coahuila (*Palmer*, 1119). Hb. Kew.

2. **Selinocarpus chenopodioides,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 262.

NORTH MEXICO, near Lake Santa Maria, Chihuahua (*Wright*, 1707). Hb. Kew.

3. **Selinocarpus palmeri,** Hemsley, n. sp. (Tab. LXX.)

Suffrutescens glaber, foliis subcarnosis teretibus, floribus solitariis pentandriis.

Suffrutex nanus, glaber, dichotome ramosissimus, ramis brevibus, teretibus, graciliusculis. *Folia* opposita, paribus æqualibus vel subæqualibus, sessilia, subcarnosa, teretia, usque ad $1\frac{3}{4}$ poll. longa, apiculata. *Flores* terminales vel pseudoaxillares, solitarii, brevissime pedunculati, $1\frac{1}{4}$ ad

$1\frac{1}{2}$ poll. longi; perianthium infundibulare, tubo angusto, elongato; stamina 5, longe exserta. *Fructus* 5-alatus, vel abortu 2–3-alatus, alis 2–3 lineas latis.

NORTH MEXICO, San Lorenzo de Laguna, Coahuila (*Palmer*, 1118). Hb. Kew.

EXPLANATION OF TAB. LXX.

Fig. 1, a leaf; 2, a flower; 3, a flower with the perianth laid open, showing the insertion of the stamens; 4, upper part of a stamen; 5, upper part of style with stigma; 6, a fruit: all enlarged.

9. OKENIA.

Okenia, Cham. et Schl. in Linnæa, v. p. 92; Benth. et Hook. Gen. Plant. iii. p. 6.

An herbaceous monotype.

1. **Okenia hypogæa,** Cham. et Schl. in Linnæa, v. p. 92.

SOUTH MEXICO, sand dunes, Vera Cruz (*Schiede & Deppe*), sand dunes on the Pacific coast, Oaxaca (*Galeotti*, 7148), Bolaños (*Coulter*, 1426), Zimapan, at 6500 feet (*Galeotti*, 7211). Hb. Kew.

10. ABRONIA.

Abronia, Juss. Gen. Plant. p. 448; Benth. et Hook. Gen. Plant. iii. p. 7.

A genus of about ten herbaceous species, inhabiting North Mexico, Texas to California, and northward to the Columbia River. Several of the species are close upon, if not actually within, our northern boundary.

1. **Abronia cycloptera,** A. Gr. in Am. Journ. Sc. ser. 2, xv. p. 319.

Abronia (*Tripterocalyx*) *micrantha*, Torr. in Fremont's 1st Rep. p. 96.

TEXAS.—NORTH MEXICO, along the Rio Grande, from San Elceario to Doña Aña (*Wright*, 1712). Hb. Kew.

2. **Abronia fragrans,** Nutt. in Hook. Kew Journ. Bot. v. p. 261; Torr. & A. Gr. Bot. Beckwith's Rep. p. 14, t. 10; Bot. Mag. t. 5544; Torr. Bot. U.S. & Mex. Bound. Surv. p. 170.

COLUMBIA RIVER, southward through UTAH to NEW MEXICO and TEXAS.—NORTH MEXICO, Chihuahua (ex *Torrey*).

[*A. mellifera*, Dougl. in Bot. Mag. t. 2879, is recorded from El Paso and westward, and northward to Oregon.]

3. **Abronia turbinata,** Torrey, ex S. Wats. in Bot. King's Exped. p. 285, t. 31; Bot. Calif. ii. p. 5.

CALIFORNIA to ARIZONA and TEXAS.—NORTH MEXICO, Gila valley (*Rothrock*).

11. BOLDOA.

Boldoa, Cav. Cat. Hort. Madr. 1803, ex Choisy in DC. Prodr. xiii. 2, p. 438; Benth. et Hook. Gen. Plant. iii. p. 8.

Salpianthus, Humb. et Bonpl. Pl. Æquin. i. p. 154, t. 44.

Bentham and Hooker referred two species to this genus, one of which we have

referred to *Cryptocarpus*. There is some confusion between these two genera; and we are unable to clear it up satisfactorily. If *Cryptocarpus globosus*, H. B. K., be really the same as *Boldoa ovatifolia*, Lag., and *B. purpurascens*, Cav., as we suspect, the genus *Cryptocarpus* should be reduced to *Boldoa*, and *Salpianthus*, H. B. K., would stand as a genus and include *Boldoa lanceolata*, Lag.

1. **Boldoa lanceolata,** Lag. Nov. Gen. et Sp. p. 10; DC. Prodr. xiii. 2, p. 438.
Salpianthus arenarius, Humb. et Bonpl. Pl. Æquin. i. p. 154, t. 44.

South Mexico, near Acapulco (*Humboldt & Bonpland; Sinclair*), Cordillera of Oaxaca, at 4500 feet (*Galeotti*, 579), without locality (*Jurgensen*, 83, 216). Hb. Kew.

12. CRYPTOCARPUS.

Cryptocarpus, H. B. K. Nov. Gen. et Sp. ii. p. 187; Benth. et Hook. Gen. Plant. iii. p. 11.

Two shrubby or half-shrubby species, restricted to Mexico, the West Indies, and South America. See remarks under *Boldoa*.

1. **Cryptocarpus globosus,** H. B. K. Nov. Gen. et Sp. ii. p. 187, t. 123.
Cryptocarpus rhomboideus, Moq. in DC. Prodr. xiii. 2, p. 88.
Boldoa ovatifolia, Lag. Nov. Gen. et Sp. p. 10; DC. Prodr. xiii. 2, p. 438; Benth. Bot. Voy. 'Sulphur,' p. 155.
Boldoa purpurascens, Cav. ex Lag. loc. cit.; Griseb. Cat. Pl. Cub. p. 24.
Boldoa paniculata, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 16).
Chenopodium petiolare, Mart. et Gal. loc. cit. p. 5, non Kunth.
Boerhaavia rhomboidea, Humb. in Link, Jahrb. der Gewächse, i. 3, p. 66.
Salpianthus purpurascens, Hook. et Arn. Bot. Beech. Voy. p. 308.

South Mexico, Tepic (*Barclay*), Vera Cruz to Orizaba (*Müller*, 1865; *Gouin*), Cordillera of Oaxaca, at 5000 feet (*Galeotti*, 582), plains of Tehuacan, at 5000 feet (*Galeotti*, 378).—Cuba; Venezuela. Hb. Kew.

13. PISONIA.

Pisonia, Linn. Gen. Plant. n. 1162; Benth. et Hook. Gen. Plant. iii. p. 9.

Trees and shrubs. About sixty species are known, chiefly natives of Tropical America; a few inhabit Asia, the Pacific Islands, and Australia; six have been found in the Mascarene Islands; and one, *P. aculeata*, has been found in continental Africa.

1. **Pisonia aculeata,** Linn. Sp. Pl. p. 1511; DC. Prodr. xiii. 2, p. 440; Griseb. Fl. Brit. W. Ind. p. 70.

South Mexico, Cordillera of Vera Cruz at 2000 feet (*Galeotti*, 3052; *Linden*, 647, 648), valley of Cordova (*Bourgeau*, 2063), Orizaba (*Botteri*, 991); Nicaragua (*Tate*, 389). —Widely dispersed in the Tropics, including Australia, especially near the sea. Hb. Kew.

2. **Pisonia hirtella,** H. B. K. Nov. Gen. et Sp. ii. p. 217; DC. Prodr. xiii. 2, p. 445.

Pisonia mexicana, Willd., ex Link, Enum. Pl. Hort. Berol. i. p. 354.
Boerhaavia arborea, Lag. Ann. Sc. Nat. 1801.
Boerhaavia arborescens, Pers. Ench. i. p. 30.

South Mexico, Vera Cruz to Orizaba (*Müller*, 913), valley of Mexico (*Bourgeau*, 558; *Bilimek*, 297; *Schaffner*, 184), Tlacolola and San Dionicio (*Andrieux*, 128), Tlalpujahua (*Keerl*), Chapultepec (*Schaffner*), San Bartolo (*Hartweg*), without locality (*Tate*, 43; *Bates*; *Parkinson*).—Peru; Bolivia. Hb. Kew.

3. **Pisonia pacurero,** H. B. K. Nov. Gen. et Sp. ii. p. 218; DC. Prodr. xiii. 2, p. 442; Seem. Bot. Voy. 'Herald,' p. 192, t. 34.

Guatemala (*Friedrichsthal*); Panama, Taboga and Paraiso (*S. Hayes*, 184, 723).—Southward to Brazil. Hb. Kew.

4. **Pisonia,** sp.

Guatemala, Barranca Honda, 3800 feet (*Salvin*). Hb. Kew.

14. NEEA.

Neea, Ruiz et Pav. Prodr. Fl. Per. et Chil. p. 52, t. 9; Benth. et Hook. Gen. Plant. iii. p. 9.

Shrubs and trees, restricted to Tropical America. About thirty species are known, ranging from Mexico and the West Indies to Peru and Brazil.

1. **Neea,** sp.

South Mexico, Teapa, Tabasco (*Linden*, 1606). Hb. Kew.

2. **Neea,** sp.

Panama, hedges at Panama (*S. Hayes*, 112). Hb. Kew.

3. **Neea,** sp.

Panama, Lion-Hill station (*S. Hayes*, 359). Hb. Kew.
The material of none of these is sufficient for description.

Order CVII. ILLECEBRACEÆ.

Illecebraceæ, Benth. et Hook. Gen. Plant. iii. p. 12.

Seventeen genera, including about ninety species, are referred to this order. They are small herbs or very small half-shrubs; and they are generally diffused all over the world, except in the frigid regions.

1. PENTACÆNA.

Pentacæna, Bartl. in Presl, Reliq. Hænk. ii. p. 5; Benth. et Hook. Gen. Plant. iii. p. 14.

Two or three herbaceous species, restricted to Western America, and ranging from Oregon to Chili.

1. **Pentacæna polycnemoides,** Bartl. in Presl's Reliq. Hænk. ii. p. 5, t. 49. f. 1.

Pentacæna ramosissima, Hook. et Arn. in Hook. Bot. Misc. iii. p. 338.
Paronychia ramosissima, DC. Prodr. iii. p. 372, et Mém. Paronych. t. 4.
Acanthonychia ramosissima, Rohrb. in Mart. Fl. Bras. xiv. 2, p. 249, t. 56.
Loeflingia ramosissima, Weinm. in Flora, 1820, p. 608.
Paronychia polycnemoides, Schl. in Linnæa, xiii. p. 407?
Pentacæna polycnemoides, Walp. Rep. i. p. 261?
Cardionema multicaule, DC. Prodr. iii. p. 373, et Mém. Paronych. t. 1?

Oregon to California.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 64); South Mexico, Real del Monte (*Coulter*, 693), foot of the peak of Orizaba (*Schiede*).—Colombia to Chili, Buenos Ayres, Uruguay, and South Brazil. Hb. Kew.

2. ACHYRONYCHIA.

Achyronychia, Torr. & Gray in Proc. Am. Acad. vii. p. 330; Benth. et Hook. Gen. Plant. iii. p. 15.

Diminutive herbs. Two species known, the present and one found in California and New Mexico.

1. **Achyronychia parryi,** Hemsley, Diag. Pl. Nov. pars 2, p. 36.

Glabra, glauca, foliis lineari-lanceolatis vel oblongis apiculatis, floribus in axillis foliorum fasciculato-cymosis, perianthii subcarnosi tubo turbinato, lobis oblongo-ellipticis late scarioso marginatis, tubo subæquilongis, staminibus 5 valde perigynis staminodiis oblongis alternantibus, ovario 2–4-ovulato.

Herba perennis, glabra, glauca, ramis gracilibus, 4–6-pollicaribus. *Folia* sessilia, lineari-lanceolata, oblonga, vel interdum fere oblanceolata vel oblonga, 4–8 lin. longa, apiculata, stipulis scariosis, amplis. *Flores* vix sesquilineam longi, in axillis foliorum fasciculatim cymosi, brevissime pedicellati, cymis densis quam folia triplo brevioribus; perianthii subcarnosi tubus turbinatus; lobi oblongo-elliptici, late diaphano-scarioso-marginati; stamina 5, valde perigyna, cum staminodiis oblongis tenuissimis alternantia; ovarium breviter stipitatum, 2–4-ovulatum, stylo filiformi, stigmate obscure trilobo. *Capsulæ* (immaturæ) trivalvæ, 1–3-spermæ.—*Achyronychia palmeri,* Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 15.

North Mexico, in the region of San Luis Potosi, at 6000 to 8000 feet (*Parry & Palmer*, 53). Hb. Kew.

3. PARONYCHIA.

Paronychia, Juss. in Mém. Mus. Par. ii. p. 389; Benth. et Hook. Gen. Plant. iii. p. 15.

About forty herbaceous species, inhabiting the Mediterranean region, North Africa, Arabia, and America; one has been found in Angola.

1. **Paronychia jamesii,** Torr. & Gray, Fl. N. Am. i. p. 170.

Oregon to Texas.—North Mexico, Ojo de Vaca, Chihuahua (*Thurber*).

2. **Paronychia mexicana,** Hemsley, Diag. Pl. Nov. pars 2, p. 36.

Omnino pilosula, ramis ad nodos tumidis, foliis confertis lineari-lanceolatis vel oblanceolatis longe apiculatis, stipulis foliis fere æquilongis, floribus fasciculatis brevissime pedicellatis, perianthii brevissime tubulosi laciniis subcarnosis oblongis brevissime apiculatis, staminodiis nullis, ovario hirsuto.

Herba perennis vel annua, omnino pilosula, a basi dense ramosa, 2–6-pollicaris. *Rami* erecti vel diffusi, graciliusculi, teretes, ad nodos tumidi. *Folia* lineari-lanceolata vel oblanceolata, 4–6 lin. longa, longe apiculata, costa subtus prominente margine recurva; stipulæ scariosæ, ovatæ, apice valde attenuatæ, foliis fere æquilongæ. *Flores* fasciculati, breviter pedicellati, circiter $\frac{3}{4}$ lin. longi; perianthii breviter tubulosi laciniæ oblongæ, crassiusculæ, brevissime apiculatæ, persistentes; stamina 5, filamentis filiformibus; staminodia nulla; ovarium puberulum, stylo filiformi, bifido. *Capsulæ* perianthiis inclusæ, monospermæ, seminibus sphæroideis, nitidis, lævibus.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 65). Hb. Kew.

3. **Paronychia,** sp.

South Mexico, Real del Monte (*Coulter*, 720). Hb. Kew.

4. CORRIGIOLA.

Corrigiola, Linn. Gen. Plant. n. 378; Benth. et Hook. Gen. Plant. iii. p. 17.

Species about six, herbaceous, inhabiting Central Europe, the Mediterranean region, North and South Africa, and America.

1. **Corrigiola andina,** Tr. et Pl. Prodr. Fl. N. Gran. i. p. 146.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 54); South Mexico, valley of Mexico (*Bourgeau*, 23).—Colombia. Hb. Kew.

Order CVIII. AMARANTACEÆ.

Amarantaceæ, Benth. et Hook. Gen. Plant. iii. p. 20.

Herbs, half-shrubs, shrubs, or rarely small trees. There are forty-eight genera, embracing about 480 species, generally spread, except in the colder regions.

1. PLEUROPETALUM.

Pleuropetalum, Hook. f. in Trans. Linn. Soc. xx. p. 221; Hook. Lond. Journ. Bot. v. t. 2; Benth. et Hook. Gen. Plant. i. p. 157.
Allochlamys, Moq. in DC. Prodr. xiii. 2, p. 463.
Melanocarpum, Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 24.

Two shrubby species, the present and one from the Galapagos.

1. **Pleuropetalum costaricense,** hort. Kew.

Melanocarpum sprucei, Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 24.

South Mexico, Santa Rita, near Vera Cruz (*Hahn*); Costa Rica.—Ecuador. Hb. Kew.

This species was cultivated at Kew in 1881 under the name *Pleuropetalum costaricense*; but we have not been able to ascertain the origin of the plant, any more than who gave it the name. However, there is no doubt that it is a true *Pleuropetalum*; and there is no doubt that it is the same as *Melanocarpum sprucei*, Hook. f., and a true *Amarantacea*. In the specimens we examined the stamens varied from five to eight.

2. CELOSIA.

Celosia, Linn. Gen. Plant. n. 289; Benth. et Hook. Gen. Plant. iii. p. 24.

About thirty herbaceous and shrubby species, inhabiting the warm regions of Asia, Africa, and America.

1. **Celosia moquini,** Guillem. in DC. Prodr. xiii. 2, p. 239.

Mexico (*Bonpland?, Ghiesbreght*).

2. **Celosia paniculata,** Linn. Sp. Pl. p. 298, ex Moq. in DC. Prodr. xiii. 2, p. 240.

Florida; Texas.—North Mexico, near Monterey (*Berlandier*, 1383), around Matamoros (*Berlandier*, 2340); South Mexico, San Blas to Tepic (*Sinclair*).—Cuba. Hb. Kew.

Grisebach (Fl. Brit. W. Ind. p. 62) refers *Celosia paniculata*, Linn., to *Chamissoa altissima*, H. B. K., and reduces *C. paniculata*, Moq., to *C. nitida*, Vahl.

3. **Celosia virgata,** Jacq. Coll. ii. p. 279, et Ic. Pl. Rar. t. 339; DC. Prodr. xiii. 2, p. 240.

North Mexico, Soledad, Coahuila (*Palmer*, 1148).—Colombia to Peru, and in Cuba. Hb. Kew.

The Mexican plant may be different from the South-American.

3. ACHATOCARPUS.

Achatocarpus, Triana in Ann. Sc. Nat. sér. 4, ix. p. 45; Benth. et Hook. Gen. Plant. iii. p. 26.

Small trees or shrubs. Besides the following there are two species in extratropical South America, and perhaps a fourth in Kew herbarium, collected by Jameson near Guayaquil.

1. **Achatocarpus nigricans,** Triana in Ann. Sc. Nat. sér. 4, ix. p. 45.,

South Mexico, Totomé, Vera Cruz (*Linden*, 72); Guatemala, San José (*S. Hayes*, 452).—Venezuela; Colombia. Hb. Kew.

4. CHAMISSOA.

Chamissoa, H. B. K. Nov. Gen. et Sp. ii. p. 196; Benth. et Hook. Gen. Plant. iii. p. 27.

Tall branching, climbing, or trailing herbs. Six or eight species, restricted to Tropical and Extratropical South America.

1. **Chamissoa altissima,** H. B. K. Nov. Gen. et Sp. ii. p. 197, t. 125; DC. Prodr. xiii. 2, p. 250; Griseb. Fl. Brit. W. Ind. p. 62.
Achyranthes altissima, Jacq. Am. p. 81.

South Mexico, valley of Cordova (*Bourgeau*, 1527, 2073), Orizaba (*Sallé*), Vera Cruz (*Berlandier*, 79); Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Tate*, 372); Panama, Barbacoas station (*S. Hayes*).—And common southward to Peru and Brazil, as well as in the West Indies. Hb. Kew.

2. **Chamissoa macrocarpa,** H. B. K. Nov. Gen. et Sp. ii. p. 197; DC. Prodr. xiii. 2, p. 250; Fl. Bras. v. 1, p. 242.
Celosia tomentosa, Willd. in Rœm. et Schult. Syst. v. p. 531.
South Mexico, Vera Cruz (*Galeotti*, 416).—Peru; Brazil.

5. AMARANTUS.

Amarantus, Linn. Gen. Plant. n. 1060 (*Amaranthus*); Benth. et Hook. Gen. Plant. iii. p. 28.

Herbaceous plants, widely diffused in warm countries. About forty-five species are enumerated; but some of them are only known under cultivation, and others were founded on very slender characters. Several of them are weeds of cultivation and waste places, and occur in nearly all warm countries.

1. **Amarantus blitum,** Linn. Sp. Pl. p. 1405; DC. Prodr. xii. 2, p. 263.
North Mexico (*Parry & Palmer*, 786½). Hb. Kew.
A widely dispersed weed.

2. **Amarantus chlorostachys,** Willd. Amarant. p. 34, t. 10. f. 19; DC. Prodr. xiii. 2, p. 259.
North Mexico (*Berlandier*); South Mexico (*Galeotti*, 387; *Sallé*); Guatemala (*Salvin*).—Common in Tropical America. Hb. Kew.

3. **Amarantus hybridus,** Linn. Sp. Pl. p. 1406; DC. Prodr. xiii. 2, p. 259.
Virginia to Florida and Texas.—North Mexico (*Berlandier; Wright*). Hb. Kew.

4. **Amarantus hypochondriacus,** Linn. Sp. Pl. p. 1407; DC. Prodr. xiii. 2, p. 256.
Mexico (*Parry & Palmer; Galeotti*).—Tropical America. Hb. Kew.

5. **Amarantus palmeri,** Wats. in Proc. Am. Acad. xii. p. 274, et Bot. Calif. ii. p. 42.

California; Arizona.—North Mexico, within the old boundary at Camp Grant (*Rothrock*), along the Rio Grande (*Berlandier*).

6. **Amarantus polygonoides,** Linn. Sp. Pl. p. 1405; Willd. Amarant. t. 6. f. 1, *a* & *b*.

Amblogyne polygonoides, Raf. Fl. Tellur. p. 42, ex Moq. in DC. Prodr. xiii. 2, p. 270.
Scleropus amarantoides, Schrad. Ind. Sem. Hort. Gœtt. 1835.
Scleropus crassipes, Moq. in DC. Prodr. xiii. 2, p. 271.
Amarantus crassipes, Schl. in Linnæa, vi. p. 757.
Sarratia berlandieri, Moq. in DC. Prodr. xiii. 2, p. 268.

Florida; Texas.—North Mexico, Cerro Alto (*Gregg*), Sonora (*Thurber*).—West Indies; Guiana. Hb. Kew.

7. **Amarantus retroflexus,** Linn. Sp. Pl. p. 1407; Willd. Amarant. t. 11. f. 21; DC. Prodr. xiii. 2, p. 258; A. Gr. Manual, ed. 5, p. 412.

Mexico (*Bourgeau*).—Warmer parts of America, and introduced in many other countries. Hb. Kew.

8. **Amarantus scariosus,** Benth. Bot. Voy. 'Sulphur,' p. 158.

Amarantus floridus, Benth. loc. cit. t. 51.
Sarratia scariosa, Moq. in DC. Prodr. xiii. 2, p. 269.

Guatemala (*Friedrichsthal*); Honduras, Tigré, Fonseca Bay (*Sinclair*). Hb. Kew.

9. **Amarantus spinosus,** Linn. Sp. Pl. p. 1407; DC. Prodr. xiii. 2, p. 260.

Mexico, Cordillera of Vera Cruz, 4000 feet (*Galeotti*, 415), Jalapa (*Linden*, 61), Orizaba (*Sallé*); Nicaragua, Chontales (*Tate*, 339; *Seemann*); Panama (*Seemann*).—And generally dispersed in the warmer parts of America; introduced in many other countries. Hb. Kew.

[*Euxolus* (*Berlasia*) *emarginatus*, A. Br. et Bouché in Linnæa, xxv. p. 297, is quite unknown to us.]

6. ACANTHOCHITON.

Acanthochiton, Torr. in Sitgr. Rep. p. 170; Benth. et Hook. Gen. Plant. iii. p. 29.

An herbaceous annual monotype.

1. **Acanthochiton wrightii,** Torr. in Sitgr. Rep. p. 170, t. 13; Bot. U.S. & Mex. Bound. Surv. p. 179; Proc. Am. Acad. Sc. v. p. 168.

Texas; Arizona.—North Mexico, Chihuahua (*Thurber*). Hb. Kew.

7. CYATHULA.

Cyathula, Lour. Fl. Coch. i. p. 101; Benth. et Hook. Gen. Plant. iii. p. 31.

About ten herbaceous and half-shrubby species, inhabiting the warmer parts of Asia, Africa, and America.

1. **Cyathula achyranthoides,** Moq. in DC. Prodr. xiii. 2, p. 326.

Desmochæta achyranthoides, H. B. K. Nov. Gen. et Sp. ii. p. 210.

South Mexico, Rio Blanco, near Orizaba (*Bourgeau*, 3040); Nicaragua, Chontales (*Tate*, 162, 334); Panama, Empire Station (*S. Hayes*, 612).—Widely dispersed in Tropical South America and the West Indies. Hb. Kew.

8. ACHYRANTHES.

Achyranthes, Linn. Gen. Plant. n. 288; Benth. et Hook. Gen. Plant. iii. p. 35.

Herbaceous and half-shrubby plants, generally diffused in tropical and subtropical regions. About twelve species are known.

1. **Achyranthes aspera,** Linn. Sp. Pl. p. 295; DC. Prodr. xiii. 2, p. 314; Griseb. Fl. Brit. W. Ind. p. 62.

Mexico (*Botteri*, 896; *Bourgeau*, 1282); Nicaragua (*Tate*, 335). Hb. Kew.

One of the most generally diffused and commonest weeds in warm countries.

9. GUILLEMINEA.

Guilleminea, H. B. K. Nov. Gen. et Sp. vi. p. 40; Benth. et Hook. Gen. Plant. iii. p. 36.

Three herbaceous species, the third inhabiting extratropical South America.

1. **Guilleminea illecebroides,** H. B. K. Nov. Gen. et Sp. vi. p. 42, t. 518.

Guilleminea densa, Moq. in DC. Prodr. xiii. 2, p. 338.

Illecebrum densum, Willd. in Rœm. et Schult. Syst. v. p. 517.

Guilleminea illecebrum, Spreng. Syst. Cur. Post. p. 103.

Texas.—Mexico, Chihuahua (*Potts*), near Tacubaya (*Schaffner*, 2), valley of Mexico (*Bourgeau*).—Ecuador; Peru. Hb. Kew.

2. **Guilleminea lanuginosa,** Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 37.

Gossypianthus lanuginosus, Moq. in DC. Prodr. xiii. 2, p. 337.

Texas; Mexico ?—Hispaniola; Peru; Bolivia; Buenos Ayres.

10. CLADOTHRIX.

Cladothrix, Nutt., ex Benth. et Hook. Gen. Plant. iii. p. 37.

Two half-shrubby species, inhabiting California and the Mexicano-Texan region.

1. **Cladothrix lanuginosa,** Nutt.; Wats. Bot. Calif. ii. p. 43.

Alternanthera lanuginosa, Moq. in DC. Prodr. xiii. 2, p. 359.

California to New Mexico, Arkansas, and Texas.—North Mexico, San Lorenzo de Laguna (*Palmer*), Tamaulipas (*Berlandier*), Sonora Alta (*Coulter*, 136). Hb. Kew.

11. MOGIPHANES.

Mogiphanes, Mart. Nov. Gen. et Sp. Bras. ii. p. 29, t. 129 ad 135.

An exclusively Tropical-American genus, comprising about ten herbaceous species.

1. **Mogiphanes straminea,** Mart. Nov. Gen. et Sp. Bras. ii. t. 135; Griseb. Fl. Brit. W. Ind. p. 64.

Mogiphanes multicaulis, Mart. Nov. Gen. et Sp. Bras. ii. t. 131.

Telanthera brasiliana, Moq. in DC. Prodr. xiii. 2, p. 382 (excl. synom.), et *T. multicaulis,* Moq. loc. cit. p. 380.

MEXICO (ex *Grisebach*).—WEST INDIES to BRAZIL.

[*Pfaffia*, Mart., having fifteen species, widely dispersed in South America, from Venezuela and Trinidad southward to Uruguay, may be expected to occur in Central America.]

12. TELANTHERA.

Telanthera, R. Br. in Tuckey's Congo, p. 477, in nota; Benth. et Hook. Gen. Plant. iii. p. 38.

A genus comprising between forty and fifty species, inhabiting the warmer parts of America; one of them recurring in Western Tropical Africa.

1. **Telanthera gracilis,** Moq. in DC. Prodr. xiii. 2, p. 375.

Gomphrena gracilis, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 9).

SOUTH MEXICO, Vera Cruz, near Puente Nacional (*Galeotti*, 444), Tampico (*Berlandier*, 2180); COSTA RICA (*Endres*, 243); PANAMA (*S. Hayes*, 211). Hb. Kew.

2. **Telanthera maritima,** Moq. in DC. Prodr. xiii. 2, p. 364.

Bucholzia maritima, Mart. Nov. Gen. et Sp. Bras. ii. p. 50, t. 147.

Alternanthera ficoidea, R. Br. ex Griseb. Fl. Brit. W. Ind. p. 67.

MEXICO (ex *Grisebach*); PANAMA (*S. Hayes*, 695).—WEST INDIES, eastern coast of SOUTH AMERICA, and western coast of AFRICA.

3. **Telanthera mexicana,** Moq. in DC. Prodr. xiii. 2, p. 372.

Gomphrena, sp., Ch. et Schl. in Linnæa, v. p. 91.

Brandesia mexicana, Schl. in Linnæa, vii. p. 392.

SOUTH MEXICO, near San Andres (*Schiede & Deppe*). Hb. Kew.

4. **Telanthera microcephala,** Moq. in DC. Prodr. xiii. 2, p. 371.

SOUTH MEXICO, Vera Cruz (*Galeotti*, 72).—COLOMBIA. Hb. Kew.

5. **Telanthera obovata,** Moq. in DC. Prodr. xiii. 2, p. 370.

Bucholzia obovata, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 8).

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1146; *Bourgeau*, 2698; *Galeotti*, 440), valley of Cordova (*Bourgeau*, 1597). Hb. Kew.

6. **Telanthera polygonoides,** Moq. in DC. Prodr. xiii. 2, p. 363.

Achyranthes polygonoides, R. Br. Prodr. Fl. Nov. Holl. p. 416.

Bucholzia polygonoides, Mart. Nov. Gen. et Sp. Bras. ii. p. 51, tt. 148–151.

Gomphrena polygonoides, Linn. Sp. Pl. p. 225.

Alternanthera polygonoides, R. Br. Prodr. Fl. N. Holl. p. 416; Griseb. Fl. Brit. W. Ind. p. 67.

SOUTH MEXICO, near Tampico (*Berlandier*); PANAMA (*Fendler*, 261; *S. Hayes*, 203; *Sinclair*).—Common in the WEST INDIES and eastern SOUTH AMERICA. Hb. Kew.

7. **Telanthera pubiflora,** Moq. in DC. Prodr. xiii. 2, p. 375 (*α. monocephala* et *β. glomerata*).

Brandesia pubiflora, Benth. in Bot. Voy. 'Sulphur,' p. 157.

South Mexico, Vera Cruz (*Galeotti*, 444 in part), valley of Cordova (*Bourgeau*, 1709); Panama (*Seemann*).—Peru. Hb. Kew.

8. **Telanthera pycnantha,** Moq. in DC. Prodr. xiii. 2, p. 376.

Brandesia pycnantha, Benth. Bot. Voy. 'Sulphur,' p. 157.

South Mexico, Acapulco (*Beechey*). Hb. Kew.

13. ALTERNANTHERA.

Alternanthera, Forsk. Fl. Ægypt.-Arab. p. 28; Benth. et Hook. Gen. Plant. iii. p. 38.

Herbs. About sixteen species, inhabiting warm countries, and most abundant in Australia and America.

1. **Alternanthera achyrantha,** R. Br. Prodr. Fl. N. Holl. i. p. 417; DC. Prodr. xiii. 2, p. 358.

South Carolina to Florida and Texas.—North Mexico, Chihuahua (*Thurber*), Matamoros (*Gregg*), region of San Luis Potosi (*Parry & Palmer*, 788); South Mexico, Vera Cruz to Orizaba (*Müller*, 44; *Botteri*, 787), Zimapan, 6500 feet (*Galeotti*, 419), valley of Mexico (*Schaffner; Bourgeau*, 195).—And widely spread in South America and the West Indies, as well as in the Canary Islands and the south of Europe. Hb. Kew.

2. **Alternanthera? herniarioides,** Beurling in Kong. Vetensk. Akad. Handl. 1854, p. 143.

Panama, Portobello (*Dahlin*).

[*A. sessilis*, R. Br., a common plant in Tropical South America and other countries, is likely to occur.]

14. GOSSYPIANTHUS.

Gossypianthus, Hook. Ic. Pl. t. 251; Benth. et Hook. Gen. Plant. iii. p. 39.

Two herbaceous species, inhabiting the Texano-Mexican region.

1. **Gossypianthus rigidiflorus,** Hook. Ic. Pl. t. 251; DC. Prodr. xiii. 2, p. 337.

Texas.—North Mexico?

15. PHILOXERUS.

Philoxerus, R. Br. Prod. Fl. N. Holl. i. p. 416 (excl. sp. n. 1); Benth. et Hook. Gen. Plant. iii. p. 40.

Sea-shore herbaceous plants, inhabiting eastern Tropical America, Western Africa, Australia, and the Loochoo Islands. Ten species are known.

1. **Philoxerus aggregatus,** H. B. K. Nov. Gen. et Sp. ii. p. 203.

Iresine aggregata, Moq. in DC. Prodr. xiii. 2, p. 340.

Gomphrena aggregata, Willd. Enum. Pl. Hort. Berol. i. p. 294.

Nicaragua (*Tate*).—Tropical America and Africa. Hb. Kew.

Perhaps not specifically different from the next.

2. **Philoxerus vermicularis,** R. Br. Prodr. Fl. N. Holl. i. p. 410; Beauv. Fl. Owar. t. 98. f. 1.

Iresine vermicularis, Moq. in DC. Prodr. xiii. 2, p. 340.
Illecebrum vermiculatum, Linn. Sp. Pl. ed. 2, p. 300.
Gomphrena vermicularis, Linn. Sp. Pl. ed. 1, p. 224.

MEXICO, along the Rio Grande (*Schott*), Tulotepec, at 6000 feet (*Galeotti*, 427).—Common in the WEST INDIES, eastern SOUTH AMERICA and WEST AFRICA. Hb. Kew.

16. GOMPHRENA.

Gomphrena, Linn. Gen. Plant. n. 314; Benth. et Hook. Gen. Plant. iii. p. 40.

About seventy herbaceous species, mostly inhabiting the warmer parts of America and Australia; one widely diffused in Asia and Africa.

1. **Gomphrena cæspitosa,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 181.

TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Schott; Smith; Wright*). Hb. Kew.

2. **Gomphrena decumbens,** Jacq. Hort. Schœnb. t. 482; DC. Prodr. xiii. 2, p. 410.

Gomphrena prostrata, Desf. Hort. Par. 1804, App. p. 219 (non Mart.).

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 789); SOUTH MEXICO, Misteca Alta, 6500 feet (*Galeotti*, 441), valley of Mexico (*Bourgeau*, 633; *Schaffner*), Vera Cruz to Orizaba (*Müller*, 737; *Gouin; Botteri*, 788), Real del Monte (*Coulter*, 1371), Oaxaca (*Andrieux*, 122), Acapulco (*Sinclair*); GUATEMALA, Volcan de Fuego (*Salvin*), Llanos de Guatemala (*Bernoulli*, 218); NICARAGUA, Greytown (*Tate*, 333).—And common in tropical SOUTH AMERICA. Hb. Kew.

3. **Gomphrena filaginoides,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 10); DC. Prodr. xiii. 2, p. 417.

SOUTH MEXICO, Misteca Alta and Cordillera of Yavezia, at 6000 to 7500 feet (*Galeotti*, 441 bis).

4. **Gomphrena globosa,** Linn. Sp. Pl. p. 326; DC. Prodr. xiii. 2, p. 409, cum γ. *albiflora*; Bot. Mag. t. 2815.

A native of India, now naturalized in many other warm countries, including Mexico and Central America.

5. **Gomphrena nitida,** Rothr. in Bot. Wheeler's Surv. 1878, p. 233.

NORTH MEXICO, Chiricahui Mountains (*Rothrock*).

6. **Gomphrena pilosa,** Moq. in DC. Prodr. xiii. 2, p. 395.

Mogiphanes pilosa, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 8).

SOUTH MEXICO, rice-fields near Ario, Michoacan, at 4000 to 5000 feet (*Galeotti*, 422).

7. **Gomphrena sonoræ,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 181.

NORTH MEXICO, mountains near Santa Cruz, Sonora (*Thurber; Wright*). Hb. Kew.

8. **Gomphrena tuberifera,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 181.

TEXAS.—NORTH MEXICO, Soledad, twenty-five miles south-west of Monclova, Coahuila (*Palmer*, 1132). Hb. Kew.

9. **Gomphrena,** sp.

NORTH MEXICO, Cerro de Pinal (*Seemann*, 1460). Hb. Kew.

10. **Gomphrena,** sp.

NORTH MEXICO, Cerro de Pinal (*Seemann*, 1461). Hb. Kew.

17. FRŒLICHIA.

Frœlichia, Mœnch. Meth. Plant. p. 50; Benth. et Hook. Gen. Plant. iii. p. 41.

An exclusively American genus, comprising about ten species, ranging from Texas to South Brazil.

1. **Frœlichia floridana,** Moq. in DC. Prodr. xiii. 2, p. 420.

FLORIDA; ARKANSAS; TEXAS; NEW MEXICO.—NORTH MEXICO, along the Rio Grande (*Parry*).

2. **Frœlichia gracilis,** Moq. in DC. Prodr. xiii. 2, p. 420.

Oplotheca gracilis, Hook. Ic. Pl. sub tab. 256.

TEXAS; NEW MEXICO.—NORTH MEXICO, Monterey (*Eaton & Edwards*), Chihuahua and Sonora (*Thurber*). Hb. Kew.

3. **Frœlichia interrupta,** Moq. in DC. Prodr. xiii. 2, p. 421.

Gomphrena interrupta, Linn. Sp. Pl. p. 326; Lam. Ill. Pl. t. 180. f. 2.
Celosia procumbens, Jacq. Ic. Pl. Rar. i. t. 51.
Oplotheca interrupta, Nutt. Gen. Am. Pl. ii. p. 79.

NORTH MEXICO, Sierra Madre &c. (*Palmer*, 1141), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 793); SOUTH MEXICO, Aguas Calientes (*Hartweg*, 86), dunes of Vera Cruz (*Galeotti*, 7031).—JAMAICA; PERU. Hb. Kew.

18. HEBANTHE.

Hebanthe, Mart. Nov. Gen. et Sp. ii. p. 42, tt. 140–145; Benth. et Hook. Gen. Plant. iii. p. 41.

A genus of about twenty herbaceous and half-shrubby species, restricted to Tropical and Subtropical America.

1. **Hebanthe hookeriana,** Hemsley, n. sp. (*Gomphrena pulverulenta,* Moq., pro parte, nec *Hebanthe pulverulenta,* Mart.)

Facie omnino *H. pulverulentæ,* sed pilis indumenti strigillosis non stellatis, floribus majoribus, staminodiis nullis.

Frutex scandens ("Liane" fide Bourgeavii), ramis teretibus, junioribus foliisque strigilloso-hirsutis, ferrugineis. *Folia* opposita, petiolata, crassiuscula, ovato-oblonga, usque ad 5 poll. longa, in ramis floriferis 1–3 poll. longa, utrinque attenuata vel obtusa, supra mox glabrata. *Flores*

hermaphroditi, "albi, carnosi" (*Galeotti*), spicati, spicis laxiusculis, usque ad $2\frac{1}{2}$ poll. longis, verticillatim paniculatis; bractea et bracteolæ rotundatæ, concavæ, subscariosæ, extus strigilloso-hirsutæ; perianthii segmenta ovato-oblonga, obtusa, circiter sesquilineam longa, 2 exteriora dorso strigilloso-hirsuta, 3 interiora dorso undique longe lanata; filamenta deorsum dilatata; staminodia nulla; ovarium ovoideum; stylus brevissimus, stigmate crasso, capitato. *Fructus* maturus deest.

South Mexico, Cordova at 2000 feet (*Galeotti*, 7160), valley of Cordova (*Bourgeau*, 1898). Hb. Kew.

Mandon's 1011, Bolivia, is very closely allied, if not the same species.

2. **Hebanthe mollis,** Hemsley, n. sp.

Vagans vel volubilis, foliis tenuibus mollibus graciliter petiolatis ovatis longe acuminatis, spicis brevibus in paniculas densiusculas dispositis, rhachibus tomentosis, bracteolis glabris scariosis, staminodiis inter stamina solitariis.

Herba vel *frutex* vagans vel volubilis, ramis teretibus, striatulis, graciliusculis, cito glabrescentibus, ad nodos constrictis. *Folia* opposita, petiolata, tenuia, mollia, ovata vel fere lanceolata, $1\frac{1}{2}$–3 poll. longa, longe acuminata, acuminatissima, basi rotundata, utrinque sparse piloso-strigillosa, petiolo gracili, 3 lineas longo. *Flores* hermaphroditi, spicati, $1\frac{1}{2}$–2 lineas longi; spicæ breves, laxiusculæ, in paniculas amplas dense aggregatæ, rhachibus tomentosis; bractea et bracteolæ latæ, concavæ, glabræ, omnino scariosæ, nitidæ, floribus vix dimidio breviores; perianthii segmenta scariosa, lineari-oblonga, omnia præsertim a basi longe lanata; staminodia (laciniæ anantheræ) inter stamina singularia, subulata, staminibus paullo breviora; ovarium glabrum; stylus brevissimus, stigmate capitato. *Fructus* maturus deest.

Mexico (Herb. *Ruiz et Pavon*). Hb. Kew.

3. **Hebanthe subnuda,** Hemsley, n. sp.

Scandens et fere omnino glabra, foliis ovatis venis transversis conspicuis instructis, floribus sparsissime arachnoideis spicatis, spicis brevissimis densis paniculatis, staminodiis brevibus squamæformibus.

Herba vel *frutex* scandens vel vagans ("Liane" fide Bourgeavii), præter flores glaberrimus, ramis crassiusculis. *Folia* (pauca superiora tantum visa) opposita, petiolata, membranacea, ovata, vel suprema lineari-lanceolata, usque ad 4 poll. longa, acuminata, apiculata, venis primariis transversis arcuatis subtus prominentibus; petiolus gracilis, usque ad 1 poll. longus. *Flores* hermaphroditi, spicati, circiter $\frac{3}{4}$ lin. longi, sparsissime araneosi; spicæ parvæ, densæ, per anthesin 1–3 lineas longæ, aliæ sessiles aliæ pedunculatæ, paniculatæ; paniculæ amplæ, ramulis angulatis; bractea et bracteolæ brevissimæ; perianthii segmenta angusta, obtusa; staminodia (laciniæ anantheræ) inter stamina solitaria, squamæformia; ovarium glabrum; stylus brevissimus, stigmate capitato obscure bilobo. *Fructus* maturus non visus.

South Mexico, Vera Cruz to Orizaba (*Müller*, 461), valley of Cordova (*Bourgeau*, 1949). Hb. Kew.

4. **Hebanthe,** sp.?

North Mexico, Guajuco, Nuevo Leon (*Palmer*, 1133). Hb. Kew.

Apparently a distinct species of this genus, having small leaves, and the spikelets in short axillary racemes.

19. IRESINE.

Iresine, Linn. Gen. Plant. n. 1113; Benth. et Hook. Gen. Plant. iii. p. 42.

About twenty herbaceous and shrubby species, inhabiting Tropical and Subtropical America.

1. **Iresine acuminata,** Moq. in DC. Prodr. xiii. 2, p. 345.

MEXICO (*Bates*).

2. **Iresine canescens,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 765.

Tromsdorffia canescens, Mart. Nov. Gen. et Sp. Bras. ii. p. 42.
Alternanthera canescens, Moq. in DC. Prodr. xiii. 2, p. 350.

SOUTH MEXICO, valley of Mexico (*Bourgeau*, 1129), Chapultepec (*Schaffner*, 27), without locality (*Parkinson; Bates; Beechey*).—VENEZUELA. Hb. Kew.

3. **Iresine cassiniæformis,** Schauer in Linnæa, xix. p. 708.

SOUTH MEXICO (*Aschenborn*, 169, 617, 618).

4. **Iresine celosioides,** Linn. Sp. Pl. p. 1456; DC. Prodr. xiii. 2, p. 347.

Iresine polymorpha, Mart. Nov. Gen. et Sp. ii. p. 56, tt. 153 et 154.
Iresine diffusa, Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 765; DC. Prodr. xiii. 2, p. 345.
Iresine floribunda, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 7).
Iresine eriophylla, Moq. in DC. Prodr. xiii. 2, p. 347.
Iresine celosioides, var. *eriophylla*, Benth. Bot. Voy. 'Sulphur,' p. 156.

SOUTH CAROLINA to FLORIDA, TEXAS, and NEW MEXICO.—NORTH MEXICO, Sonora and Chihuahua (*Thurber*); SOUTH MEXICO, Mazatlan (*Seemann*, 1462), Zimapan (*Coulter*, 368), valley of Mexico (*Bourgeau*, 896), Vera Cruz to Orizaba (*Müller*, 199; *Galeotti*, 412, 413), around Oaxaca (*Andrieux*, 121), Jalapa and Mirador (*Linden*, 71 and 73), Chiapas (*Ghiesbreght*, 659), Yucatan and Tabasco (*Johnson*, 99); GUATEMALA, Volcan de Fuego, at 6000 feet (*Salvin*), San José de Guatemala (*S. Hayes*, 450); HONDURAS, Tigré, Gulf of Fonseca (*Sinclair*); NICARAGUA, Chontales (*Tate*, 338); COSTA RICA (*Endres*); PANAMA, Empire Station (*S. Hayes*, 431), Chagres (*Fendler*, 260).—Southward to PERU and BOLIVIA. Hb. Kew.

5. **Iresine elatior,** Rich. in Willd. Sp. Pl. iv. p. 766; DC. Prodr. xiii. 2, p. 343.

Rosea elatior, Mart. Nov. Gen. et Sp. Bras. ii. p. 59, t. 155.

SOUTH MEXICO, Orizaba (*Botteri*, 1059); PANAMA (*Seemann*).—WEST INDIES and VENEZUELA. Hb. Kew.

6. **Iresine frutescens,** Moq. in DC. Prodr. xiii. 2, p. 344.

SOUTH MEXICO, near Hacienda de la Laguna (*Schiede*).

7. **Iresine gossypina,** Nees in Linnæa, xix. p. 708.

MEXICO (*de Berghes*).

8. **Iresine gracilis,** Mart. et Gall. in Bull. Acad. Brux. x. (reprint, p. 7); DC. Prodr. xiii. 2, p. 345.

South Mexico, near Vera Cruz (*Galeotti*, 414).

9. **Iresine hookeri,** Moq. in DC. Prodr. xiii. 2, p. 344.

Iresine elongata, Hook. et Arn. Bot. Beech. Voy. p. 308, non Humb. et Bonpl.

Mexico (*Beechey*). Hb. Kew.

10. **Iresine interrupta,** Benth. Bot. Voy. 'Sulphur,' p. 156.

Alternanthera richardii, Moq. in DC. Prodr. xiii. 2, p. 353.

South Mexico, Tepic (*Sinclair*), Acapulco (*Barclay*), Cuernavaca (*Bourgeau*, 1283), without locality (*Parkinson*). Hb. Kew.

11. **Iresine latifolia,** Benth. et Hook. f. Gen. Pl. iii. p. 42.

Alternanthera latifolia, Moq. in DC. Prodr. xiii. 2, p. 351.

Gomphrena latifolia, Mart. et Gal. in Bull. Acad. Brux. (reprint, p. 9).

North Mexico, Monterey, Nuevo Leon (*Palmer*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 792); Zacoalco, valley of Mexico (*Bourgeau*, 196, 1413), Yotla (*Andrieux*, 123). Hb. Kew.

12. **Iresine,** sp.

Guatemala, Dueñas (*Fraser*), without locality (*Friedrichsthal*). Hb. Kew.

20. DICRAURUS.

Dicraurus, Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 42.

A shrubby monotype.

1. **Dicraurus leptocladus,** Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 43.

Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 790). Hb. Kew.

Order CIX. CHENOPODIACEÆ.

Chenopodiaceæ, Benth. et Hook. Gen. Plant. iii. p. 43.

This Order is composed of herbs and small shrubs, the greater number inhabiting sea-shores, salt marshes, and stony deserts, whilst others are almost ubiquitous weeds of cultivation. Upwards of 500 species are known; and these are referred to eighty genera.

1. CHENOPODIUM.

Chenopodium, Linn. Gen. Plant. n. 309; Benth. et Hook. Gen. Plant. iii. p. 51.

A genus of about fifty herbaceous species, generally diffused in temperate regions, rarer in the tropics. Several of them are exceedingly common weeds of cultivation.

1. **Chenopodium album,** Linn.; DC. Prodr. xiii. 2, p. 70; Wats. in Proc. Am. Acad. ix. p. 96.

An Old-World species, now common in many parts of America, including MEXICO. Hb. Kew.

2. **Chenopodium ambrosioides,** Linn. Sp. Pl. p. 320; DC. Prodr. xiii. 2, p. 72; Griseb. Fl. Brit. W. Ind. p. 60.

Ambrina ambrosioides, Spach, Veg. Phan. v. p. 207.

A common species in TROPICAL AMERICA, now also common in most other warm countries. Hb. Kew.

3. **Chenopodium berlandieri,** Moq. Chenop. Enum. p. 23, et in DC. Prodr. xiii. 2, p. 63; Wats. in Proc. Am. Acad. ix. p. 95.

FLORIDA; TEXAS.—MEXICO, around the city of Mexico (*Berlandier*, 1906).

4. **Chenopodium bipinnatifidum,** Moric., ex Moq. in DC. Prodr. xiii. 2, p. 76.

Ambrina dissecta, Moq. Chenop. Enum. p. 38.

MEXICO, mountains of Mexico (*Berlandier*, 613).

5. **Chenopodium botrys,** Linn. Sp. Pl. p. 320; DC. Prodr. xiii. 2, p. 75; Wats. in Proc. Am. Acad. ix. p. 98.

A European species, now wild in many other countries, including MEXICO. Hb. Kew.

6. **Chenopodium cornutum,** Benth. et Hook. f., ex Wats. Bot. Calif. ii. p. 482.

Teloxys cornuta, Torr. in Bot. Whipple's Exped. p. 129, et Bot. U.S. & Mex. Bound. Surv. p. 182.

NORTH MEXICO, Mount Graham and Santa Rita del Cobre, within the old boundary (*Rothrock*).

7. **Chenopodium fœtidum,** Schrad. in Mag. Gesell. Nat. Berl. 1808, p. 79, non Lam., ex Moq. in DC. Prodr. xiii. 2, p. 76.

Chenopodium graveolens, Lag. et Rodr. in Ann. Sc. Nat. 1802, p. 70, t. 5 (non Willd.).
Chenopodium schraderianum, Rœm. et Schult. Syst. Veg. vi. p. 260.
Botrydium schraderi, Spach, Veg. Phan. v. p. 299.
Ambrina fœtida, Moq. Chenop. Enum. p. 38.
Chenopodium effusum, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 6).

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 722), peak of Orizaba, at 7000 to 8000 feet (*Galeotti*, 384; *Linden*, 63), valley of Mexico (*Bourgeau*, 895). Hb. Kew.

Moquin gives the further distribution of this species as Buenos Ayres, Abyssinia, and the Cape of Good Hope.

8. **Chenopodium fremontii,** Wats. in King's Rep. v. p. 287, et in Proc. Am. Acad. ix. p. 94.

COLORADO to CALIFORNIA, and southward to NEW MEXICO.—NORTH MEXICO, on Mount Graham, within the old boundary (*Rothrock*).

[*C. glaucum*, Linn., a European species, occurs here and there in Mexico as an introduced weed.]

9. **Chenopodium incisum,** Poir. Dict. Suppl. i. p. 392; DC. Prodr. xiii. 2, p. 75.
SOUTH MEXICO, around the city of Mexico (*Berlandier*, 847).

10. **Chenopodium mexicanum,** Moq. in DC. Prodr. xiii. 2, p. 70.
SOUTH MEXICO, around the city of Mexico (*Berlandier*, 451).

[*C. murale*, Linn., a European species, is an introduced weed in Mexico.]

[*Beta vulgaris*, Linn., occurs in Mexico as an escape from cultivation.]

2. ATRIPLEX.

Atriplex, Linn. Gen. Plant. n. 1153; Benth. et Hook. Gen. Plant. iii. p. 53.

Herbs and shrubs. About 100 species, widely diffused in temperate and subtropical regions.

1. **Atriplex acanthocarpa,** Wats. in Proc. Am. Acad. ix. p. 117.
Obione acanthocarpa, Torr. Bot. U.S. & Mex. Bound. Surv. p. 183.
TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Thurber*), San Lorenzo de Laguna, Coahuila (*Palmer*, 1161). Hb. Kew.

2. **Atriplex arenaria,** Nutt. Gen. N. Am. Pl. i. p. 198.
Obione arenaria, Moq. Chenop. Enum. p. 71, et in DC. Prodr. xiii. 2, p. 167.
NEW JERSEY southward.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 779); SOUTH MEXICO, Tehuacan at 5000 feet (*Galeotti*, 377). Hb. Kew.

3. **Atriplex elegans,** Dietr. Syn. Pl. v. p. 537; Wats. in Proc. Am. Acad. ix. p. 114.
Obione elegans, Moq. in DC. Prodr. xiii. 2, p. 113.
Obione radiata, Torr. Bot. U.S. & Mex. Bound. Surv. p. 183.
NEW MEXICO; ARIZONA.—NORTH MEXICO, Sonora Alta (*Coulter*), Chihuahua (*Thurber*).

4. **Atriplex canescens,** James, Cat. p. 178; Torr. in Ann. Lyc. N. York, ii. p. 239; Wats. in Proc. Am. Acad. ix. p. 120, nec Nutt. Gen. N. Am. Pl. i. p. 197.
Obione tetraptera, Benth. Bot. Voy. 'Sulphur,' p. 48.
Obione canescens, Torr. in Frem. Rep. p. 95, pro parte.
Obione occidentalis, Moq. in DC. Prodr. xiii. 2, p. 112.
Atriplex berlandieri, Moq. Chenop. Enum. p. 65.
Obione berlandieri, Moq. in DC. Prodr. xiii. 2, p. 114.
Atriplex occidentalis, Dietr. Syn. Pl. v. p. 537.
COLORADO to NEVADA and southward to SOUTH CALIFORNIA and NEW MEXICO.—NORTH MEXICO, Chihuahua (*Thurber*), Sonora (*Wright*), Cerros Bravos (*Gregg*), San Luis Potosi (*Parry & Palmer*), Parras &c. (*Palmer*). Hb. Kew.

5. **Atriplex greggii,** Wats. in Proc. Am. Acad. ix. p. 118.

Obione canescens, var., Torr. Bot. U.S. & Mex. Bound. Surv. p. 183.

Obione acanthocarpa, Torr. loc. cit., pro parte.

NEW MEXICO.—NORTH MEXICO, Sonora.

6. **Atriplex hymenelytra,** Wats. in Proc. Am. Acad. ix. p. 119.

Obione hymenelytra, Torr. in Pacif. Railr. Rep. iv. p. 129, t. 20, et Bot. U.S. & Mex. Bound. Surv. p. 182.

SOUTH UTAH to CALIFORNIA.—NORTH MEXICO?, on the lower Gila (*Schott*).

7. **Atriplex linifolia,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 959; H. B. K. Nov. Gen. et Sp. ii. p. 192.

Obione linifolia, Moq. Chenop. Enum. p. 74, et in DC. Prodr. xiii. 2, p. 114.

SOUTH MEXICO, around the city of Mexico (*Berlandier*).—PERU.

8. **Atriplex muricata,** Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 959; H. B. K. Nov. Gen. et Sp. ii. p. 193.

Obione? muricata, Moq. in DC. Prodr. xiii. 2, p. 109.

Obione? kunthiana, Moq. Chenop. Enum. p. 72.

MEXICO (*Humboldt & Bonpland*).

9. **Atriplex obovata,** Moq. Chenop. Enum. p. 61, et in DC. Prodr. xiii. 2, p. 99.

NORTH MEXICO, San Luis Potosi (*Berlandier*).

10. **Atriplex oppositifolia,** Wats. in Proc. Am. Acad. ix. p. 118.

NORTH MEXICO, Matamoros (*Berlandier*, 3201).

11. **Atriplex parvifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 192, et vii. p. 445.

SOUTH MEXICO, near San Juan del Rio, 6000 to 7000 feet (*Humboldt & Bonpland*).

12. **Atriplex polygama,** Sessé in Lag. Nov. Gen. et Sp. p. 12.

Obione? polygama, Moq. in DC. Prodr. xiii. 2, p. 114.

Obione? salicifolia, Moq. Chenop. Enum. p. 74.

MEXICO? (*Sessé*).

13. **Atriplex spinosa,** Dietr. Syn. Pl. v. p. 536.

Atriplex confertifolia, Wats. in Proc. Am. Acad. ix. p. 119.

Obione confertifolia, Torr. in Bot. Frem. Rep. p. 318.

Obione spinosa, Moq. in DC. Prodr. xiii. 2, p. 108.

IDAHO and WYOMING southward to NEW MEXICO.—NORTH MEXICO, mountains near Lake Santa Maria, Chihuahua (*Bigelow*).

3. EUROTIA.

Eurotia, Adans. Fam. ii. p. 260; Benth. et Hook. Gen. Plant. iii. p. 55.

Three half-shrubby species inhabiting Southern Russia, Western and Central Asia, North-west India, and North-west America.

1. **Eurotia lanata,** Moq. Chenop. Enum. p. 81, et in DC. Prodr. xiii. 2, p. 121; Wats. in Proc. Am. Acad. ix. p. 121.

Eurotia ceratoides, Hook. Fl. Bor.-Am. ii. p. 126, nec C. A. Mey.

SASKATCHEWAN southward to NEW MEXICO.—NORTH MEXICO, Sierra Madre (*Palmer*, 1164). Hb. Kew.

4. SPIROSTACHYS.

Spirostachys, Wats. in Proc. Am. Acad. ix. p. 125, non Ung. Sternb.; Benth. et Hook. Gen. Plant. iii. p. 63.

1. **Spirostachys occidentalis,** Wats. in Proc. Am. Acad. ix. p. 125, et in Bot. Calif. ii. p. 58.

Arthrocnemum fruticosum, Torr. in Stansbury's Rep. p. 394, non Moq.

Arthrocnemum macrostachyum, Torr. Bot. U.S. & Mex. Bound. Surv. p. 184, non Bunge.

Halostachys occidentalis, Wats. in King's Rep. v. p. 293.

Northern NEVADA and UTAH southward to NEW MEXICO, ARIZONA, and CALIFORNIA.—NORTH MEXICO, Santa Rosa, Coahuila (*Bigelow*), Parras, Coahuila (*Palmer*). Hb. Kew.

5. CORISPERMUM.

Corispermum, Linn. Gen. Plant. n. 12; Benth. et Hook. Gen. Plant. iii. p. 57.

About eight annual species inhabiting the south of Europe, Western and Central Asia, and one China and one North-west America.

1. **Corispermum hyssopifolium,** Linn.; Pall. Fl. Ross. ii. p. 112, t. 98; DC. Prodr. xiii. 2, p. 140; Wats. in Proc. Am. Acad. ix. p. 123.

Western North America from the ARCTIC OCEAN southward to CALIFORNIA and NEW MEXICO.—NORTH MEXICO, Chihuahua (ex *Watson*).—Also in South-eastern EUROPE and Western and Central ASIA.

6. SUÆDA.

Suæda, Forsk. Fl. Ægypt.-Arab. p. 69; Benth. et Hook. Gen. Plant. iii. p. 66.

Shrubs and herbs inhabiting sea-shores and salt deserts nearly all over the world. About forty species are known.

1. **Suæda diffusa,** Wats. in Proc. Am. Acad. ix. p. 88.

Chenopodium maritimum, Torr. in Ann. Lyc. Nat. Hist. N. York, ii. p. 239.

Suæda maritima, Wats. in King's Rep. v. p. 294, non Dum.

Common on the alkaline plains from NEVADA and the UPPER MISSOURI to TEXAS.—NORTH MEXICO, Gila valley abundant (*Rothrock*), Saltillo (*Palmer*). Hb. Kew.

2. **Suæda suffrutescens,** Wats. in Proc. Am. Acad. ix. p. 88.

Suæda fruticosa, var. *multiflora,* Torr. in Pacif. Railr. Rep. iv. p. 130, et Bot. U.S. & Mex. Bound. Surv. p. 184.

TEXAS to CALIFORNIA.—NORTH MEXICO, Parras, Coahuila (*Palmer*). Hb. Kew.

3. **Suæda torreyana,** Wats. in Proc. Am. Acad. ix. p. 88.

Chenopodina linearis, Torr. in Stansbury's Rep. p. 394.
Suæda fruticosa, Hook. et Arn. Bot. Beech. Voy. p. 387.
Chenopodina moquini, Torr. in Pacif. Railr. Rep. vii. p. 18.

WYOMING and NEVADA to CALIFORNIA and NEW MEXICO.—NORTH MEXICO (ex *Watson*). Hb. Kew?

There is a specimen of a species of *Suæda* in Kew herbarium from South Mexico (Vera Cruz to Orizaba, *Müller*, 1379) which may belong to one of the foregoing.

7. SALSOLA.

Salsola, Linn. Gen. Plant. n. 311; Benth. et Hook. Gen. Plant. iii. p. 71.

Herbs, half-shrubs, and shrubs, the greater number inhabiting Europe, North Africa, and Temperate and Tropical Asia, ten South Africa, and one North and South America and Australasia.

1. **Salsola kali,** Linn. Sp. Pl. p. 322; DC. Prodr. xiii. 2, p. 187; Wats. in Proc. Am. Acad. ix. p. 85; Fl. Dan. t. 818.

This species grows in North and South America, and covers nearly the whole range of the Order, except South Africa; but we have not seen any Mexican or Central-American specimens, though it may be expected to occur.

8. BOUSSINGAULTIA.

Boussingaultia, H. B. K. Nov. Gen. et Sp. vii. p. 194, t. 645 bis; Benth. et Hook. Gen. Plant. iii. p. 77.

Twining herbs, restricted to Tropical America. About ten species are known.

1. **Boussingaultia baselloides,** H. B. K. Nov. Gen. et Sp. vii. p. 196, t. 645 bis; DC. Prodr. xiii. 2, p. 228; Bot. Mag. t. 3620.

Boussingaultia leptostachys, Moq. in DC. Prodr. xiii. 2, p. 229.

SOUTH MEXICO, Gonacatepec (*Andrieux*, 72).—And in South America southward to SOUTH BRAZIL. Hb. Kew.

2. **Boussingaultia ramosa,** Hemsley.

Tandonia ramosa, Moq. in DC. Prodr. xiii. 2, p. 227.

GUATEMALA, Dueñas, at 5000 feet (*Salvin*), without locality (*Skinner*). Hb. Kew.

9. ANREDERA.

Anredera, Juss. Gen. Plant. p. 84; Benth. et Hook. Gen. Plant. iii. p. 78.

An herbaceous twining monotype, endemic in America.

1. **Anredera scandens,** Moq. in DC. Prodr. xiii. 2, p. 230.

Anredera spicata, Pers. Ench. i. p. 297.
Anredera vesiculosa, Poir. Dict. Suppl. i. p. 391.
Basella vesicaria, Lam. Ill. Pl. t. 215. f. 1.
Anredera vesicaria, Gærtn. f. Fruct. t. 213.
Polygonum scandens, Linn. Sp. Pl. p. 522.

Texas.—Mexico, Tula (*Berlandier*); Panama (*Seemann*).—Southward to Peru and in the West Indies. Hb. Kew.

Order CX. PHYTOLACCACEÆ.

Phytolaccaceæ, Benth. et Hook. Gen. Plant. iii. p. 78.

Trees, shrubs, or herbs that are usually woody at the base. There are about sixty species known, belonging to nineteen genera; and they are mostly natives of tropical and subtropical regions. A few inhabit temperate regions; but the order is unrepresented in colder climates.

1. RIVINA.

Rivina, Linn. Gen. Plant. n. 162 (*Rivinia*); Benth. et Hook. Gen. Plant. iii. p. 80.

Herbaceous plants. An American genus of one or two, or, according to some authors, five species. We should regard all the forms as variations of one species.

1. **Rivina humilis,** Linn. Sp. Pl. p. 177; DC. Prodr. xiii. 2, p. 13; Bot. Mag. t. 1781.

Rivina lævis, Linn. Mant. p. 41; DC. Prodr. xiii. 2, p. 11; Griseb. Fl. Brit. W. Ind. p. 59; Bot. Mag. t. 2333.
Rivina orientalis, Moq. in DC. Prodr. xiii. 2, p. 12.
Rivina brasiliensis, Nocca in Usteri Ann. vi. p. 63.
Rivina purpurascens, Schrad. Gen. Pl. Ill. p. 17, t. 5.
Rivina lanceolata, Willd. Enum. Pl. Hort. Berol. Suppl. p. 8.
Rivina glabrata, H. B. K. Nov. Gen. et Sp. ii. p. 184.
Rivina mexicana, Moç. et Sessé in DC. Prodr. xiii. 2, p. 14; DC. Calq. des Dess. Pl. Fl. Mex. 1095.

An exceedingly common plant in Tropical and Subtropical America, including Mexico and Central America. Also naturalized in many parts of the Old World. Hb. Kew.

2. VILLAMILLA.

Villamilla, Ruiz et Pav. Fl. Per. et Chil. Ic. ined. t. 402; Benth. et Hook. Gen. Plant. iii. p. 81.

An exclusively Tropical-American genus of four or five half-shrubby species.

1. **Villamilla octandra,** Hook. f. in Benth. et Hook. Gen. Plant. iii. p. 81.

Rivina octandra, Linn. Sp. Pl. p. 177; DC. Prodr. xiii. 2, p. 11.

Rivina scandens, Mill. Dict. n. 2.

South Mexico, Yucatan and Tabasco (*Johnson*, 62); Panama, Barbacoas (*S. Hayes*).—Common in the West Indies and the north part of South America. Hb. Kew.

3. PETIVERIA.

Petiveria, Linn. Gen. Plant. n. 459; Benth. et Hook. Gen. Plant. iii. p. 82.

An herbaceous monotype, endemic in America.

1. **Petiveria alliacea,** Linn. Sp. Pl. p. 486; DC. Prodr. xiii. 2, p. 9; Griseb. Fl. Brit. W. Ind. p. 59; Desc. Fl. Antill. v. t. 374.

Petiveria ochroleuca, Moq. in DC. Prodr. xiii. 2, p. 9, et spp. auctor. alior.

Florida.—South Mexico, Cordillera of Oaxaca (*Galeotti*, 7150), Yucatan (*Linden*, 95; *Johnson*, 98); Nicaragua, Realejo (*Sinclair*).—Common in eastern S. America, southward to Rio Grande do Sul, and in the West Indies. Hb. Kew.

4. MICROTEA.

Microtea, Sw. Prodr. 53, et Fl. Ind. Occ. i. p. 542, t. 12; Benth. et Hook. Gen. Plant. iii. p. 82.

An exclusively American genus of six or seven annual species.

1. **Microtea debilis,** Sw. Prodr. p. 53, et Fl. Ind. Occ. i. p. 543, t. 12; DC. Prodr. xiii. 2, p. 17; Griseb. Fl. Brit. W. Ind. p. 59.

Guatemala, Yzabal (*Bernoulli*, 877); Nicaragua, Omotepé (*Lévy*, 271); Panama, Chagres (*Fendler*, 109), without locality (*Seemann*, 323; *S. Hayes*, 196).—And common in the West Indies and tropical South America. Hb. Kew.

5. PHYTOLACCA.

Phytolacca, Linn. Gen. Plant. n. 588; Benth. et Hook. Gen. Plant. iii. p. 84.

Shrubs, herbs, or rarely trees. About ten species, mostly inhabiting Tropical and Subtropical America; a few inhabit Eastern Asia, the Himalaya mountains, Asia Minor, and Africa. A specimen collected by Parry and Palmer in the State of San Luis Potosi may belong to *P. decandra*, Linn.

1. **Phytolacca icosandra,** Linn. Sp. Pl. p. 631; DC. Prodr. xiii. 2, p. 33; Griseb. Fl. Brit. W. Ind. p. 58; Bot. Mag. t. 2633.

Phytolacca purpurascens, A. Br. et Bouché in Linnæa, xxv. p. 297?

Phytolacca mexicana, Gærtn. Fruct. i. p. 377; Lam. Ill. Pl. t. 393; Sweet, Hort. Brit. ed. 3, p. 571; DC. Prodr. xiii. 2, p. 34.

South Mexico, Vera Cruz (*Galeotti*, 366); Guatemala, Cuesta de Atitlan (*Bernoulli*, 623); Nicaragua, Chontales (*Seemann*, 142; *Tate*, 387, 388).—Southward to Peru and Brazil, and in the West Indies. Hb. Kew.

2. **Phytolacca octandra,** Linn. Sp. Pl. p. 631; DC. Prodr. xiii. 2, p. 32; Griseb. Fl. Brit. W. Ind. p. 58.

Phytolacca decandra, Desc. Fl. Antill. v. t. 312, non Linn.

Phytolacca rugosa, A. Br. et Bouché in Linnæa, xxv. p. 297?

Phytolacca longispica, Moq. in DC. Prodr. xiii. 2, p. 33?

South Mexico, region of Orizaba (*Botteri*, 804; *Müller*, 414; *Bourgeau*, 2720), valley of Mexico (*Bourgeau*, 199; *Graham; Schaffner*), valley of Cordova (*Bourgeau*, 2216), Toluca (*Andrieux*, 120); Guatemala, Volcan de Fuego, 6000 feet (*Godman & Salvin*).—Southward to Peru and Uruguay, and in the West Indies. Hb. Kew.

6. STEGNOSPERMA.

Stegnosperma, Benth. Bot. Voy. 'Sulphur,' p. 17; Benth. et Hook. Gen. Plant. iii. p. 87.

A shrubby monotype, confined to America.

1. **Stegnosperma halimifolia,** Benth. Bot. Voy. 'Sulphur,' p. 17, t. 12; Rich. Fl. Cub. t. 44 ter; DC. Prodr. xiii. 2, p. 36.

Lower California.—Guatemala, sea-shore (*Friedrichsthal*).—Cuba; San Domingo. Hb. Kew.

7. AGDESTIS.

Agdestis, Moç. et Sessé in DC. Syst. Veg. i. p. 543; Prodr. i. p. 103; Benth. et Hook. Gen. Plant. iii. p. 87.

An herbaceous twining monotype.

1. **Agdestis clematidea,** Moç. et Sessé in DC. Prodr. i. p. 103; Calq. des Dess. Pl. Fl. Mex. 12. (Tab. LXXI.)

Agdestis teterrima, De Notar. Ind. Sem. Hort. Bot. Genuen. 1855; Walp. Ann. vii. p. 69?

"Fructus inferus, turbinatus, perianthii segmentis alatus, 1-locularis, 1-spermus, pericarpio coriaceo semini adhærente," ex Benth. et Hook. Gen. Pl. iii. p. 87, sed fructus sæpius 3–4-locularis, 3–4-spermus.

Texas.—Mexico, Tantoyuca (*Ervendberg*, 146), Tlacolola, Oaxaca (*Andrieux*, 71), Yucatan (*Linden*, 109). Hb. Kew.

EXPLANATION OF TAB. LXXI.

Fig. 1, a flower; 2, portion of perianth and base of stamens; 3, front view of a stamen; 4, back view of ditto; 5, vertical section of ovary; 6, ripe fruit with persistent perianth: all enlarged.

The description of *A. teterrima*, De Notaris, agrees exactly with dried specimens of the original *A. clematidea*. Whether the statement "tota planta odore fœtido, nauseabundo scatet" is applicable to our plant we cannot say.

Order CXI. BATIDEÆ.

Batideæ, Benth. et Hook. Gen. Plant. iii. p. 88.

This Order consists of a single species, *Batis maritima*, Linn., indigenous in America (and the Sandwich Islands ?), and ranging from Florida, the West Indies, and Venezuela to Brazil. It also occurs in California, and is very likely to be found within the limits of this enumeration.

Order CXII. POLYGONACEÆ.

Polygonaceæ, Benth. et Hook. Gen. Plant. iii. p. 88.

Herbs, shrubs, or trees. About 600 species, belonging to thirty genera, and dispersed nearly all over the world. The arboreous element is almost exclusively tropical American; and the shrubby species are mainly congregated in the Eastern Mediterranean region and in Western Asia.

1. ERIOGONUM.

Eriogonum, Mich. Fl. Bor.-Am. i. p. 246, t. 24; Benth. et Hook. Gen. Plant. iii. p. 92; Torr. et A. Gr. in Proc. Am. Acad. viii.; S. Wats. in Proc. Am. Acad. xii.

This genus is confined to North America, chiefly western, a few species extending into Mexico; and it comprises about 100 herbaceous and half-shrubby species.

1. **Eriogonum abertiana,** Torr. in Emory's Rep. p. 151; DC. Prodr. xiv. p. 21; Proc. Am. Acad. viii. p. 189, et xii. p. 258.

Texas; New Mexico; Arizona.—North Mexico, Chihuahua (ex *Torrey & Gray*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*). Hb. Kew.

2. **Eriogonum alatum,** Torr. in Sitgreave's Rep. p. 168, t. 8; DC. Prodr. xiv. p. 6; Proc. Am. Acad. viii. p. 154, et xii. p. 254.

Nebraska to Texas and Arizona.—North Mexico, near the copper-mines (*Bigelow*; *Thurber*). Hb. Kew.

3. **Eriogonum annuum,** Nutt. in Trans. Am. Phil. Soc. v. p. 164; DC. Prodr. xiv. p. 19; Proc. Am. Acad. viii. p. 173, et xii. p. 262.

Colorado to the Rocky Mountains, and southward to Texas.—North Mexico, Chihuahua (*Thurber*).

4. **Eriogonum atrorubens,** Engelm. Pl. Wisliz. p. 24; DC. Prodr. xiv. p. 7; Proc. Am. Acad. viii. p. 154, et xii. p. 261.

North Mexico, Cosiquiriachi, Chihuahua (*Wislizenus*), mountains east of Saltillo, Coahuila (*Palmer*, 2088). Hb. Kew.

5. **Eriogonum cernuum,** Nutt. in Journ. Acad. Sc. Philad. n. s. i. p. 162; DC. Prodr. xiv. p. 21; Proc. Am. Acad. viii. p. 182, et xii. p. 259.

Oregon to Colorado and New Mexico.—North Mexico, on the Gila (*Schott*).

6. **Eriogonum ciliatum,** Torr., ex Benth. in DC. Prodr. xiv. p. 20; Proc. Am. Acad. viii. p. 186, et xii. p. 261.

North Mexico, Buena Vista, near Coahuila (*Edwards*), near Monterey (*Gregg*). Hb. Kew.

7. **Eriogonum deflexum,** Torr. in Ives's Colorado Exped., Bot. p. 24; Proc. Am. Acad. viii. p. 181, et xii. p. 259.

Nevada and Utah to California.—North Mexico, within the old boundary at Tucson (*Palmer*).

8. **Eriogonum fasciculatum,** Benth., γ. **polifolium,** Torr. et Gr. in Proc. Am. Acad. viii. p. 169.

Eriogonum polifolium, Benth. in DC. Prodr. xiv. p. 12.

California.—North Mexico, lower Gila.

9. **Eriogonum greggii,** Torr. et Gr. in Proc. Am. Acad. viii. p. 187; Wats. in Proc. Am. Acad. xii. p. 262.

North Mexico, near San Juan de la Vaqueria, Nuevo Leon (*Gregg*), Sierra Madre (*Palmer*, 1176). Hb. Kew.

10. **Eriogonum hieracifolium,** Benth. in DC. Prodr. xiv. p. 6; Proc. Am. Acad. xii. p. 254.

Texas.—North Mexico?, Rio Grande valley (ex *Watson*).

11. **Eriogonum jamesii,** Benth. in DC. Prodr. xiv. p. 7; Proc. Am. Acad. viii. p. 155, et xii. p. 255.

Colorado to New Mexico.—North Mexico, without locality (*Palmer*, 1172). Hb. Kew.

12. **Eriogonum pharnaceoides,** Torr. in Sitgreave's Rep. p. 167, t. 11; DC. Prodr. xiv. p. 22; Proc. Am. Acad. viii. p. 189, et xii. p. 258.

New Mexico; Arizona.—North Mexico, near Janos, Chihuahua (*Thurber*).

13. **Eriogonum polycladon,** Benth. in DC. Prodr. xiv. p. 16; Proc. Am. Acad. viii. p. 178.

Eriogonum helianthemifolium, Benth. loc. cit. p. 15.

Texas.—North Mexico, Chihuahua (*Potts*). Hb. Kew.

14. **Eriogonum rotundifolium,** Benth. in DC. Prodr. xiv. p. 21; Proc. Am. Acad. viii. p. 183, et xii. p. 260.

Texas.—North Mexico, Santa Maria, Coahuila (*Wright*). Hb. Kew.

15. **Eriogonum tenellum,** Torr. in Ann. Lyc. Nat. Hist. N. York, ii. p. 241; DC. Prodr. xiv. p. 19; Proc. Am. Acad. viii. p. 186, et xii. p. 261.

Colorado to New Mexico and Texas.—North Mexico, Parras, Coahuila (*Palmer*, 1173). Hb. Kew.

β. **ramosissimum,** Benth. in DC. Prodr. xiv. p. 20.

Texas.—North Mexico, Soledad, twenty-five miles south-west of Monclova (*Palmer*, 1174). Hb. Kew.

16. **Eriogonum thomasii,** Torr. in Pacif. Railr. Rep. iv. p. 364; Torr. et Gr. in Proc. Am. Acad. viii. p. 184.

California; Arizona.—North Mexico, within the old boundary at Camp Grant (*Palmer*).

17. **Eriogonum undulatum,** Benth. in DC. Prodr. xiv. p. 7; Proc. Am. Acad. viii. p. 155, et xii. p. 255.

South Mexico, Real del Monte, at 8000 feet (*Galeotti*, 3111). Hb. Kew.

18. **Eriogonum wrightii,** Torr., ex Benth. in DC. Prodr. xiv. p. 15; Proc. Am. Acad. viii. p. 176, et xii. p. 266.

California to New Mexico.—North Mexico, Sonora (*Thurber*), Camp Grant (*Rothrock*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 796). Hb. Kew.

19. **Eriogonum,** sp. n. ?

North Mexico, Sierra Madre (*Palmer*, 1175). Hb. Kew.

2. CHORIZANTHE.

Chorizanthe, R. Br.; Benth. in Trans. Linn. Soc. xvii. p. 146, t. 19; Benth. et Hook. Gen. Plant. iii. p. 93.

About thirty species, of which eight are Chilian, and the rest Californian. All the Californian species are annual herbs; with one exception the Chilian species are perennial herbs or half-shrubs.

1. **Chorizanthe brevicornu,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 177.

Nevada and Colorado to Arizona and California.—North Mexico, on the Gila (*Parry*).

3. POLYGONUM.

Polygonum, Linn. Gen. Plant. n. 495; Benth. et Hook. Gen. Plant. iii. p. 97.

This genus is dispersed nearly all over the world; and some of the species are almost cosmopolitan. There are about 150 distinct species, mostly herbaceous.

1. **Polygonum acre,** H. B. K. Nov. Gen. et Sp. ii. p. 179; DC. Prodr. xiv. p. 108 (varietates); Griseb. Fl. Brit. W. Ind. p. 161; Fl. Bras. xiv. t. 5.

Pennsylvania to Texas.—Mexico (*Müller*, 568; *Botteri*, 813; *Bourgeau*, 2658); Guatemala (*Bernoulli*, 134); Panama (*Fendler*).—And southward to Buenos Ayres, as well as in the West Indies. Hb. Kew.

2. **Polygonum acuminatum,** H. B. K. Nov. Gen. et Sp. ii. p. 178; DC. Prodr. xiv. p. 114 (varietates); Griseb. Fl. Brit. W. Ind. p. 161; Mart. Fl. Bras. xiv. t. 4.

South Mexico, Chilapilla, Tabasco (*Linden*).—Common in eastern South America and in the West Indies. Hb. Kew.

3. **Polygonum amphibium,** Linn. Sp. Pl. p. 517; DC. Prodr. xiv. p. 115 (varietates); A. Gr. Man. Bot. ed. 5, p. 416; Fl. Dan. t. 282.

Mexico (*Bourgeau*).—A very widely dispersed species in the temperate and subtropical regions of the Northern Hemisphere. Hb. Kew.

4. **Polygonum aviculare,** Linn. Sp. Pl. p. 519; DC. Prodr. xiv. p. 97 (varietates); A. Gr. Man. Bot. ed. 5, p. 417.

Mexico (*Bourgeau*).—One of the commonest weeds of temperate and subtropical countries all over the world, supposed to have spread from Europe or Asia. Hb. Kew.

5. **Polygonum glabrum,** Willd. Sp. Pl. ii. p. 447; DC. Prodr. xiv. p. 114; Griseb. Fl. Brit. W. Ind. p. 161; Wight's Ic. Pl. Ind. Or. t. 1799.

South Mexico, region of Orizaba (*Bourgeau*, 1579; *Sallé*), Jalapa (*Linden*, 83), valley of Mexico (*Bourgeau*).—West Indies, southward to Uruguay; also in the Pacific Islands, India, and China. Hb. Kew.

6. **Polygonum hispidum,** H. B. K. Nov. Gen. et Sp. ii. p. 178; DC. Prodr. xiv. p. 122.

Guatemala, valley of Guatemala (*Hartweg*), Llano de San Juan de Dios (*Bernoulli*, 139).—Colombia; Guiana; Brazil; Cuba. Hb. Kew.

7. **Polygonum hydropiperoides,** Michx. Fl. Bor.-Am. i. p. 239; DC. Prodr. xiv. p. 103. et β. *virgatum*, Meissn.; A. Gr. Man. Bot. ed. 5, p. 416.

Polygonum virgatum, Ch. et Schl. in Linnæa, iii. p. 45.

Eastern Canada to Florida.—Mexico, valley of Cordova (*Bourgeau*, 2290), Vera Cruz to Orizaba (*Müller*, 1165).—Brazil; Chili. Hb. Kew.

8. **Polygonum lapathifolium,** Linn. Sp. Pl. p. 517; DC. Prodr. xiv. p. 119; A. Gr. Man. Bot. ed. 5, p. 415.

Eastern Canada southward.—Mexico (*Botteri*, 811, 812; *Bourgeau*, 628; *Coulter*, 1385; *Berlandier*, 2342); Guatemala (*Bernoulli*).—Also in South America. This very widely dispersed weed of cultivation was probably introduced into America. Hb. Kew.

9. **Polygonum nodosum,** Pers. Enchir. i. p. 440; DC. Prodr. xiv. p. 118.

Mexico; Guatemala. Another very widely spread species, of which it is impossible to say where it is indigenous and where it is naturalized. Hb. Kew.

10. **Polygonum pennsylvanicum,** Linn. Sp. Pl. p. 519; DC. Prodr. xiv. p. 120; A. Gr. Man. Bot. ed. 5, p. 388.

Common in eastern North America.—Mexico (*Ehrenberg* ex *Meissner*).

11. **Polygonum persicarioides,** H. B. K. Nov. Gen. et Sp. ii. p. 179; DC. Prodr. xiv. p. 117.

South Mexico, Real del Monte to Zimapan (*Coulter*, 1384), region of Orizaba (*Müller*, 1611; *Botteri*, 815, 816).—Colombia to Guiana and Chili. Hb. Kew.

12. **Polygonum segetum,** H. B. K. Nov. Gen. et Sp. ii. p. 177; DC. Prodr. xiv. p. 120 (varietates).

South Mexico, Zacatecas (*Hartweg*, 105), near Vera Cruz (*Galeotti*, 451), without locality (*Linden*).—Colombia. Hb. Kew.

13. **Polygonum tenue,** Michx. Fl. Bor.-Am. i. p. 238; DC. Prodr. xiv. p. 100.

Canada to New Mexico.—North Mexico, within the old boundary at Santa Rita del Cobre (*Wright*, 1776). Hb. Kew.

4. RUMEX.

Rumex, Linn. Gen. Plant. n. 451; Benth. et Hook. Gen. Plant. iii. p. 100.

Herbs or rarely shrubs. About 130 species have been enumerated; but some authors estimate the number at less than 100. They are generally dispersed in north temperate regions, and rarer within the tropics and in the southern hemisphere. A few species are almost cosmopolitan weeds of cultivation. Most of the Mexican specimens in Kew herbarium have not been determined. All together they represent about six species.

1. **Rumex berlandieri,** Meissn. in DC. Prodr. xiv. p. 45.

Louisiana.—Mexico, Matamoros and around Tampico (*Berlandier*).—Chili.

2. **Rumex brevipes,** Meissn. in DC. Prodr. xiv. p. 55.

South Mexico, between Tampico and Real del Monte (*Berlandier*, 243; *Ehrenberg*, 40).

3. **Rumex chrysocarpus,** Moris. Enum. Sem. Fl. Taurin. 1831; DC. Prodr. xiv. p. 46.

Mexico?; Chili?

4. **Rumex crispus,** Linn., var. **mexicanus,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 13).

South Mexico, Misteca Alta and Yavezia, near Oaxaca, at 6000 to 7000 feet (*Galeotti*, 476).

[**Rumex kunthianus,** Schult. f. Syst. Nat. vii. p. 1423; DC. Prodr. xiv. p. 45; *R. longifolius*, H. B. K. Nov. Gen. et Sp. ii. p. 180, incorrectly recorded as Mexican.]

5. **Rumex maritimus,** Linn.? DC. Prodr. xiv. p. 59.

South Mexico, Chapultepec (*Schaffner*, 1), near Mexico (*Bourgeau*, 200). Hb. Kew.

6. **Rumex mexicanus,** Meissn. in DC. Prodr. xiv. p. 45.

South Mexico, around Leon (*Mendez*), without locality (*Schiede*, 90; *Ehrenberg*).

5. MUEHLENBECKIA.

Muehlenbeckia, Meissn. Gen. Plant. p. 316; Benth. et Hook. Gen. Plant. iii. p. 101.

Shrubs or half-shrubs inhabiting Australia, New Zealand, the Pacific Islands, and America, from Mexico through the Andes to extratropical regions. About fifteen species are known.

1. **Muehlenbeckia tamnifolia,** Meissn. Gen. ii. p. 227, et in DC. Prodr. xiv. p. 149 (varietates).

Polygonum tamnifolium, H. B. K. Nov. Gen. et Sp. ii. p. 180.
Muehlenbeckia benthamii et *M. quadrangulata,* Endl. Gen. Pl. Suppl. iv. p. 51.
Polygonum flexuosum, Benth. Pl. Hartw. p. 80.
Polygonum quadrangulatum, Mart. et Gal. in Bull. Acad. Brux. x. p. 353.

South Mexico, peak of Orizaba, 7000 to 8000 feet (*Galeotti*, 455; *Linden*, 84); Guatemala, Quezaltenango (*Hartweg*).—Colombia to Chili. Hb. Kew.

2. **Muehlenbeckia vulcanica,** Meissn. in DC. Prodr. xiv. p. 148.

Muehlenbeckia volcanica, Endl. Gen. Plant. Suppl. iv. p. 51.
Polygonum volcanicum, Benth. Pl. Hartw. p. 81.

Guatemala, under the summit of Volcan de Xetuch, Quezaltenango (*Hartweg*, 562). Hb. Kew.

6. COCCOLOBA.

Coccoloba, Linn. Gen. Plant. n. 496; Benth. et Hook. Gen. Plant. iii. p. 102.

Trees or shrubs, sometimes lofty climbers. The genus is peculiar to America, and comprises nearly eighty species, which, with few exceptions in Mexico and Florida, inhabit the tropical regions.

1. **Coccoloba barbadensis,** Jacq., β. **mexicana,** Meissn. in DC. Prodr. xiv. p. 153.

Mexico (*Schiede*).

Grisebach (Fl. Brit. W. Ind. p. 163) reduces *C. barbadensis*, Jacq., to a variety of *C. punctata*, Linn.

2. **Coccoloba caracasana,** Meissn. in DC. Prodr. xiv. p. 157.

Guatemala (*Friedrichsthal*); Costa Rica (ex *Meissner*); Panama, near the city of Panama (*Seemann*, 557).—Venezuela. Hb. Kew.

3. **Coccoloba humboldti,** Meissn. in DC. Prodr. xiv. p. 163.

South Mexico, near Tantoyuca (*Ervendberg*), dunes of the Pacific Ocean (*Galeotti*, 7218), Vera Cruz to Orizaba (*Müller*, 49; *Gouin*). Hb. Kew.

4. **Coccoloba leptostachya,** Benth. Bot. Voy. 'Sulphur,' p. 159; DC. Prodr. xiv. p. 163.

Panama (*Seemann*, 1167 bis).—Colombia. Hb. Kew.

5. **Coccoloba manzinellensis,** Beurling in Kong. Vetensk. Akad. Handl. 1854, p. 142.

Panama, Island of Manzinella (*Bilberg*).

6. **Coccoloba pubescens,** Linn. Sp. Pl. p. 532; DC. Prodr. xiv. p. 152; Bot. Mag. t. 3166.

Mexico, cult.? (*Schiede*).—West Indies; Guiana.

7. **Coccoloba strobilulifera,** Meissn. in DC. Prodr. xiv. p. 169.

Nicaragua, Omotepé (*Friedrichsthal*).—Colombia.

8. **Coccoloba uvifera,** Jacq. Amer. p. 112, t. 73; DC. Prodr. xiv. p. 152; Seem. Bot. Voy. 'Herald,' p. 192; Bot. Mag. t. 3130.

FLORIDA.—PANAMA, Chagres (*Fendler*, 287).—VENEZUELA to BRAZIL and in the WEST INDIES. Hb. Kew.

7. CAMPDERIA.

Campderia, Benth. Bot. Voy. 'Sulphur,' p. 159; Benth. et Hook. Gen. Plant. iii. p. 102.

Three shrubby or small arboreous species, inhabiting Mexico, Central America, and Brazil.

1. **Campderia floribunda,** Benth. Bot. Voy. 'Sulphur,' p. 160, t. 52.

Campderia mexicana, Meissn. in DC. Prodr. xiv. p. 171.

SOUTH MEXICO, Tehuantepec, Oaxaca (*Andrieux*, 115); HONDURAS, Isle de Tigré, Gulf of Fonseca (*Sinclair*). Hb. Kew.

2. **Campderia lindeniana,** Benth. in Benth. et Hook. Gen. Plant. iii. p. 103.

SOUTH MEXICO, Teapa, Tabasco (*Linden*, 1602). Hb. Kew.

3. **Campderia nematostachya,** Griseb. in Bonplandia, 1858, p. 4.

PANAMA (*Duchassaing*).

8. ANTIGONON.

Antigonon, Endl. Gen. Plant. p. 310; Benth. et Hook. Gen. Plant. iii. p. 103.

A genus of climbing shrubs endemic in Mexico, Central America, and Colombia. They are very ornamental, and commonly cultivated on that account.

1. **Antigonon cinerascens,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 14); DC. Prodr. xiv. p. 184.

SOUTH MEXICO, Tlacolola, Oaxaca (*Andrieux*, 116), Jalapa (*Galeotti*, 462), Sierra del Pedro Nolasco &c. (*Jurgensen*, 197). Hb. Kew.

2. **Antigonon cordatum,** Mart. et Gal. in Bull. Acad. Brux x. (reprint, p. 14); DC. Prodr. xiv. p. 184.

SOUTH MEXICO, near Puente Nacional and La Antigua (*Galeotti*, 463), Tolololapa, Oaxaca (*Andrieux*, 117). Hb. Kew.

3. **Antigonon guatemalense,** Meissn. in DC. Prodr. xiv. p. 184.

Polygonum grandiflorum, Bertol. Fl. Guat. p. 12.
Antigonon insigne, Mast. in Gard. Chron. n. s. vii. p. 780?

GUATEMALA, Esquintla (*Velasquez*), Motagua (*Godman & Salvin*), without locality (*Skinner*); COSTA RICA (*Endres*).—COLOMBIA. Hb. Kew.

4. **Antigonon leptopus,** Hook. et Arn. Bot. Beech. Voy. p. 308, t. 69; DC. Prodr. xiv. p. 184; Bot. Mag. t. 5816.

SOUTH MEXICO, Mazatlan to San Sebastian (*Seemann*, 1463), San Blas to Tepic (*Coulter*, 1389; *Galeotti*, 462; *Sinclair*). Hb. Kew.

9. PODOPTERUS.

Podopterus, Humb. et Bonpl. Pl. Æquin. ii. p. 89; Benth. et Hook. Gen. Plant. iii. p. 104.

A shrubby monotype.

1. **Podopterus mexicanus,** Humb. et Bonpl. Pl. Æquin. ii. p. 89, t. 107; DC. Prodr. xiv. p. 171; Lam. Ill. Suppl. t. 940.

South Mexico, around Vera Cruz (*Humboldt & Bonpland*), Manzanilla Bay (*Barclay*). Hb. Kew.

10. TRIPLARIS.

Triplaris, Linn. Gen. Plant. n. 103; Benth. et Hook. Gen. Plant. iii. p. 104.

An exclusively Tropical-American genus of trees. Twenty-five species have been enumerated; but there are probably not more than ten distinct ones.

1. **Triplaris auriculata,** Meissn. in DC. Prodr. xiv. p. 174.

Mexico (*Pavon*).—Colombia?

2. **Triplaris cumingiana,** Fisch. et Mey. in Mém. Acad. St. Pétersb. série 6, vi. p. 148; DC. Prodr. xiv. p. 175; Seem. Bot. Voy. 'Herald,' p. 192.

Triplaris colombiana, Meissn. in DC. Prodr. xiv. p. 175.

Panama, Remedios, Veraguas (*Seemann*, 1168), along the railroad (*S. Hayes*, 121). Hb. Kew.

11. RUPRECHTIA.

Ruprechtia, C. A. Mey. in Mém. Acad. St. Pétersb. série 6, vi. p. 148, t. 4; Benth. et Hook. Gen. Plant. iii. p. 104.

A genus of about twenty arboreous and shrubby species, endemic in America, and ranging from Mexico to extratropical South America.

1. **Ruprechtia cumingii,** Meissn. in DC. Prodr. xiv. p. 179.

Ruprechtia costata, Meissn. loc. cit. p. 180?

South Mexico, neighbourhood of Tlacatalpan (*Hahn*); Guatemala (*Friedrichsthal*); Salvador, Acajutla (*S. Hayes*, 458); Panama and—Colombia (*Cuming*, 1148). Hb. Kew.

2. **Ruprechtia,** sp?

Mexico, without locality (*Parkinson*; *Bates*). Hb. Kew.

Series II. MULTIOVULATÆ AQUATICÆ.

Order CXIII. PODOSTEMACEÆ.

Podostemaceæ, Benth. et Hook. Gen. Plant. iii. p. 105.

Aquatic herbs, usually growing on submerged rocks in running water. There are twenty-one genera, comprising about 120 species, which are widely dispersed in Tropical America, Africa, and Asia; a very few inhabit extratropical South Africa and North America; one has been found in Tropical Australia; and one doubtful member of the order has been found in South-western Europe.

1. TRISTICHA.

Tristicha, Thouar. Nov. Gen. Madag. p. 3; Benth. et Hook. Gen. Plant iii. p. 108.

Three or four species in Tropical America and Africa.

1. **Tristicha hypnoides,** Spreng. Syst. Veg. iv. pars 2, p. 10; DC. Prodr. xvii. p. 44 (varietates); Tulasne, Monogr. p. 186.

Tristicha bryoides, Gard. in Wight's Ic. Pl. Ind. Or. t. 1920.

Guatemala, Mazatenango (*Bernoulli*, 39), without locality (*Skinner*); Costa Rica (*Endres*).—Colombia to Guiana and Brazil; Tropical and South Africa, and Madagascar. Hb. Kew.

2. MARATHRUM.

Marathrum, Humb. et Bonpl. Pl. Æquin. i. p. 39; Benth. et Hook. Gen. Plant. iii. p. 110.

This genus is confined to America, and consists of about six species, ranging from Mexico to Brazil.

1. **Marathrum flexuosum,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 511.

South Mexico, Guatulco, Oaxaca (*Liebmann*).

2. **Marathrum fœniculaceum,** Humb. et Bonpl. Pl. Æquin. p. 40, t. 11; Tul. Monogr. p. 74; DC. Prodr. xvii. p. 53.

Lacis fœniculacea, Bong. in Mém. Acad. St. Pétersb. série 6, iii. p. 74.

Mexico (*Hœnke*).—Colombia.

Tulasne by mistake referred foliage collected by Seemann in Panama of *M. oxycarpum* to this.

3. **Marathrum oxycarpum,** Tul. Monogr. p. 76; DC. Prodr. xvii. p. 54.

Marathrum fœniculaceum, Seem. Bot. Voy. 'Herald,' p. 197, non Humb. et Bonpl.

Guatemala, Mazatenango (*Bernoulli*); Nicaragua (*Tate*); Panama, in all the rivers of Veraguas and Western Panama (*Seemann*). Hb. Kew.

Tulasne misnamed foliage of this, collected by Seemann, *M. fœniculaceum,* whereupon the latter assumed that these two very distinct species were the same.

4. **Marathrum? ricciæforme,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 512.

South Mexico, Huitamalco, Vera Cruz (*Liebmann*).

5. **Marathrum schiedeanum,** Tul. Monogr. p. 77; DC. Prodr. xvii. p. 53.

Lacis (*Marathrum*) *schiedeana,* Cham. in Linnæa, ix. p. 504, t. 6.

South Mexico, Rio de Actopan, near Actopan, and Rio de Tioselo, near Hacienda de la Laguna (*Schiede*); Guatemala, without locality (*Skinner*). Hb. Kew.

6. **Marathrum tenue,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 511.

South Mexico, Huitamalco, Vera Cruz (*Liebmann*).

3. OSERYÀ.

Oserya, Tul. et Wedd. in Ann. Sc. Nat. série 3, xi. p. 105; DC. Prodr. xvii. p. 83; Benth. et Hook. Gen. Plant. iii. p. 114.

Four species, inhabiting Mexico, Guiana, and Brazil.

1. **Oserya coulteriana,** Tul. in Ann. Sc. Nat. série 3, xi. p. 106; Monogr. p. 155, t. 10. fig. 2.

SOUTH MEXICO, San Blas to Guadalaxara (*Coulter*, 1394). Hb. Kew.

4. POTAMOBRYON.

Potamobryon, Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 512.

This genus is not taken up in Bentham and Hooker's 'Genera Plantarum;' and both Weddell and Tulasne overlooked it. Liebmann describes it as monandrous, with a perianth of four scale-like leaves and an unequally two-valved capsule.

1. **Potamobryon concinnum,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 513.

SOUTH MEXICO, Maloapam, Vera Cruz (*Liebmann*).

2. **Potamobryon laxum,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 514.

SOUTH MEXICO, near Paso de Ovejas, Vera Cruz (*Liebmann*).

3. **Potamobryon patulum,** Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1849, p. 515.

SOUTH MEXICO, Barranca de San Francisco, near Mirador, Vera Cruz (*Liebmann*).

Series III. MULTIOVULATÆ TERRESTRES.

Order CXIV. CYTINACEÆ.

Cytinaceæ, Benth. et Hook. Gen. Plant. iii. p. 116.

Fleshy parasitical herbs, sometimes reduced to a single flower sessile on a branch or root of the nurse-plant. About twenty-two species are known—and they are referred to seven genera. They inhabit the south of Europe, Africa, America, and Tropical Asia.

1. CYTINUS.

Cytinus, Linn. Gen. Plant. n. 1232; Benth. et Hook. Gen. Plant. iii. p. 118.

Root-parasites. Four species are known—one in the Mediterranean region, one in South Africa, and two in Mexico.

1. **Cytinus americanus,** R. Br. in Trans. Linn. Soc. xix. p. 246; Hook. f. in DC. Prodr. xvii. p. 108 (quoad plantam Barclayanam tantum); A. Gr. in Proc. Am. Acad. v. p. 188.

Scytanthus bambusarum, Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1847, p. 183.

Bdallophytum ceratantherum, Eichl. in Bot. Zeit. 1872, p. 715, t. 8 A. figg. 1–5 (male-perianthium vere 7–9-partitum).

SOUTH MEXICO, Papantla (*Liebmann*), without locality (*Barclay*), Wartenberg, Tantoyuca (*Ervendberg*). Hb. Kew.

2. **Cytinus andrieuxii,** Hemsley.

Cytinus americanus, Hook. f. in DC. Prodr. xvii. p. 108, pro parte.

Bdallophytum andrieuxii, Eichl. in Bot. Zeit. 1872, p. 715, t. 8 B.

South Mexico, between Huauapan and Oaxaca (*Andrieux*, 50). Hb. Kew.

[*Pilostyles thurberi*, A. Gr. in Mem. Am. Acad. n. s. v. p. 326, et Torr. Bot. U.S. & Mex. Bound. Surv. t. 52, was collected near the Gila; whether north or south is not recorded. It was parasitical on the branches of *Dalea emoryi*.]

[The small order Nepenthaceæ is restricted to the tropics of the Old World.]

Order CXV. ARISTOLOCHIACEÆ.

Aristolochiaceæ, Benth. et Hook. Gen. Plant. iii. p. 121.

Herbs or shrubs, many of them twiners, and some lofty climbers. There are five genera, comprising about 200 species, which are generally diffused in warm countries, rarer in temperate regions, especially in the southern hemisphere.

1. ARISTOLOCHIA.

Aristolochia, Linn. Gen. Plant. n. 1022; Benth. et Hook. Gen. Plant. iii. p. 123.

Herbs or shrubs, many of them climbers, and some of them very tall climbers; very few arboreous. Nearly 200 species are enumerated, and they cover the whole range of the order. *Guaco mexicana*, Liebm. in Forhandl. Skand. Naturf. Kiöbenh. 1847, p. 203, is doubtless a species of this genus.

1. **Aristolochia arborea,** Lind.; DC. Prodr. xv. 1, p. 477; Bot. Mag. t. 5295.

South Mexico, Chiapas (*Ghiesbreght*). Hb. Kew.

2. **Aristolochia brevipes,** Benth. Pl. Hartw. p. 15; DC. Prodr. xv. 1, p. 441.

Einomeia brevipes, Kl. in Monatsb. 1859, p. 606.

South Mexico, Aguas Calientes (*Hartweg*). Hb. Kew.

β. **wrightii,** Duchar. in DC. Prodr. xv. 1, p. 441; Seem. Bot. Voy. 'Herald,' p. 331, t. 72 (species).

New Mexico.—North Mexico, Sierra Madre (*Seemann*, 2175), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*). Hb. Kew.

3. **Aristolochia bracteosa,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 37, et in DC. Prodr. xv. 1, p. 441.

Mexico (*Moçino & Sessé*).

4. **Aristolochia costaricensis,** Duchar. in DC. Prodr. xv. 1, p. 450.

Howardia costaricensis, Kl. in Monatsb. 1859, p. 614.

Costa Rica (*Hoffmann; Warscewicz*).

5. **Aristolochia flexuosa,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 65, et in DC. Prodr. xv. 1, p. 442.

South Mexico (*Ghiesbreght*).

6. **Aristolochia fœtens,** Lindl. Bot. Reg. t. 1824; DC. Prodr. xv. 1, p. 473.

Panama, Frijoli station (*S. Hayes*, 107).—West Indies. Hb. Kew.

7. **Aristolochia fœtida,** H. B. K. Nov. Gen. et Sp. ii. p. 147, t. 114; DC. Prodr. xv. 1, p. 440.

Howardia (*Pedinochilus*) *fœtida,* Kl. in Monatsb. 1859, p. 619.

South Mexico, near Ario, at 5550 feet (*Humboldt & Bonpland*).

8. **Aristolochia galeottii,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 44, et in DC. Prodr. xvi. 1, p. 450.

South Mexico, San Blas and Mazatlan (*Galeotti*, 212).

9. **Aristolochia gibbosa,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 53; DC. Prodr. xv. 1, p. 459.

Aristolochia odoratissima, Benth. Pl. Hartw. p. 82, non Linn.

Howardia (*Pedinochilus*) *benthamii,* Kl. in Monatsb. 1859, p. 620.

South Mexico, Oaxaca (*Ghiesbreght*); Guatemala, San Antonio, Retalhuleu (*Hartweg*). Hb. Kew.

10. **Aristolochia glandulosa,** Kickx, β. **glabra,** Duchar. in DC. Prodr. xv. 1, p. 452.

Aristolochia macradenia, Hook. Bot. Mag. t. 4467.

Howardia (*Cyphomanthemum*) *macradenia,* Kl. in Monatsb. 1859, p. 618.

South Mexico, Morelia (*Hartweg*). Hb. Kew.

Typical *A. glandulosa* inhabits Cuba.

11. **Aristolochia grandiflora,** Sw. Fl. Ind. Occ. iii. p. 1566; DC. Prodr. xv. 1, p. 472; Bot. Mag. tt. 4368, 4369.

Aristolochia gigas, Lindl. Bot. Reg. 1842, t. 60.

Howardia (*Sterigmaria*) *grandiflora,* Kl. in Monatsb. 1859, p. 610.

Guatemala, Las Nubes, Cerro de Zunil, 4350 feet (*Salvin*), without locality (*Skinner*).—West Indies. Hb. Kew.

12. **Aristolochia inflata,** H. B. K. Nov. Gen. et Sp. ii. p. 145, t. iii.; DC. Prodr. xv. 1, p. 458.

San Salvador (*Bernoulli*, 11); Panama (*Seemann*, 288; *Hinds*). Hb. Kew.

13. **Aristolochia karwinskii,** Duchar. in DC. Prodr. xv. 1, p. 442.

Mexico (*Karwinski*).

14. **Aristolochia mathewsii,** Duchar. in DC. Prodr. xv. 1, p. 497.

Aristolochia reticulata, Seem. Bot. Voy. 'Herald,' p. 193, non Nutt.

Panama, David, Veraguas (*Seemann*, 1242).—Peru. Hb. Kew.

15. **Aristolochia maxima,** Linn. Sp. Pl. ii. p. 1361.

α. **maxima,** Duchar. in DC. Prodr. xv. 1, p. 456; Jacq. Amer. t. 146.

Guatemala (*Friedrichsthal*).—Venezuela. Hb. Kew.

γ. **angustifolia,** Duchar. in DC. Prodr. xv. 1, p. 457.

Howardia (*Pedinochilus*) *hoffmannii,* Kl. in Monatsb. 1859, p. 621.

Costa Rica (*Hoffmann*).

16. **Aristolochia micrantha,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 35, t. 5. figg. 9–17, et in DC. Prodr. xv. 1, p. 440.

Einomeia berlandieri, Kl. in Monatsb. 1859, p. 606.

South Mexico, Tampico (*Berlandier*).

17. **Aristolochia odoratissima,** Linn. Sp. Pl. p. 1362; DC. Prodr. xv. 1, p. 474; Descourt. Fl. Ant. v. t. 356.

Mexico (ex *Duchartre*); Central America (ex *Duchartre*).—Venezuela; Jamaica. Hb. Kew.

β. **grandiflora,** Duchar. in DC. Prodr. xv. 1, p. 475.

South Mexico, Tabasco (*Linden*, 49).

18. **Aristolochia orbicularis,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 59, et in DC. Prodr. xv. 1, p. 467.

Mexico (*Moçino & Sessé*).

19. **Aristolochia ovalifolia,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 50, et in DC. Prodr. xv. 1, p. 453.

South Mexico, Oaxaca, at about 2000 feet (*Galeotti*, 213).

20. **Aristolochia pardina,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 47, et in DC. Prodr. xv. 1, p. 450.

South Mexico, Colima (*Ghiesbreght*).

21. **Aristolochia pavoniana,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 55, et in DC. Prodr. xv. 1, p. 465.

Mexico (*Pavon*).

22. **Aristolochia sericea,** Benth. Pl. Hartw. p. 81; DC. Prodr. xv. 1, p. 438.

Siphisia sericea, Kl. in Monatsb. 1859, p. 603.

Guatemala, Comitlan (*Hartweg*). Hb. Kew.

23. **Aristolochia taliscana,** Hook. et Arn. Bot. Beech. Voy. p. 309; DC. Prodr. xv. 1, p. 452.

SOUTH MEXICO, San Blas to Tepic (*Coulter*, 1413), Jalisco (*Beechey*), Manzanilla Bay (*Barclay*), without locality (*Hahn*). Hb. Kew.

24. **Aristolochia tricaudata,** Duchar. in Ill. Hort. t. 523; Bot. Mag. t. 6067.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 800). Hb. Kew.

25. **Aristolochia trilobata,** Linn. Sp. Pl. p. 1361; DC. Prodr. xv. 1, p. 444.

PANAMA, Chagres (*Fendler*, 440).—GUIANA to BRAZIL, and in the WEST INDIES. Hb. Kew.

26. **Aristolochia uhdeana,** Duchar. in DC. Prodr. xv. 1, p. 465.

MEXICO (*Uhde*).

27. **Aristolochia variifolia,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 65, et in DC. Prodr. xv. 1, p. 442.

SOUTH MEXICO, Cordillera of Oaxaca (*Galeotti*, 208). Hb. Kew.

28. **Aristolochia valentina,** Duchar. in Ann. Sc. Nat. série 4, ii. p. 39, et in DC. Prodr. xv. 1, p. 443.

MEXICO.

29. **Aristolochia veraguensis,** Duchar. in DC. Prodr. xv. 1, p. 458.

COSTA RICA (*Warscewicz*); PANAMA, Veraguas (*Warscewicz*).

[*Aristolochia repens*, *A. conferta*, and *A. scandens*, Mill. Dict., recorded from Mexico, are doubtful species.]

Series IV. MICREMBRYEÆ.

Order CXVI. PIPERACEÆ.

Piperaceæ, Benth. et Hook. Gen. Plant. iii. p. 125.

Herbs, shrubs, very few arboreous. About 1000 species referred to eight genera. A very large proportion of the species inhabit tropical countries; and the order is unrepresented in Europe.

1. HOUTTUYNIA.

Houttuynia, Thunb. Fl. Jap. p. 12; Benth. et Hook. Gen. Plant. iii. p. 128.

A genus of three herbaceous species, whereof one has a wide range from the Himalayas through China to Japan, and a second doubtful one inhabits China.

1. **Houttuynia californica,** Benth. et Hook. Gen. Plant. iii. p. 128.

Anemiopsis californica, Hook. et Arn. Bot. Beech. Voy. p. 390, t. 92; DC. Prodr. xvi. 1, p. 237; Bot. Mag. t. 5292; Torr. Bot. U.S. & Mex. Bound. Surv. p. 203.

Anemiopsis bolanderi, C. DC. in Linnæa, xxxvii. p. 333?

Texas to California.—North Mexico, Parras, Coahuila (*Palmer*, 1184), Chihuahua (ex *Torrey*); South Mexico, Leon (*Hartweg*). Hb. Kew.

2. PIPER.

Piper, Linn. Gen. Plant. n. 43, pro parte; Benth. et Hook. Gen. Plant. iii. p. 129.

Upwards of 600 species of this genus have been described; many of them, however, are imperfectly known, and it is probable that with fuller materials a considerable reduction of this number would be made. Some of them are tall herbs, and others are trees; but most of them are shrubs, some of them of climbing habit.

1. **Piper aduncum,** Linn. Sp. Pl. p. 41; DC. Prodr. xvi. 1, p. 285; Jacq. Ic. Pl. Rar. ii. t. 210; Descour. Fl. Antill. iii. t. 230.

Artanthe adunca, Miq.; Griseb. Fl. Brit. W. Ind. p. 171.

Steffensia adunca, Kth. in Linnæa, xiii. p. 633.

South Mexico, Orizaba (*Botteri*, 257, 574; *Bourgeau*, 2054), valley of Cordova (*Bourgeau*, 1606, 1958), Jalapa (*Galeotti*); British Honduras, Belize (*March*); Panama, Chagres (*Fendler*, 268).—Southward to Peru and Brazil, and in the West Indies. Hb. Kew.

2. **Piper angustifolium,** Ruiz et Pav. Pl. Peruv. et Chil. i. p. 38, t. 57. fig. *a*; DC. Prodr. xvi. 1, p. 285 (varietates).

Piper granulosum, Ruiz et Pav. loc. cit. p. 38, t. 64. fig. *b*.

Mexico (*Sallé; Botteri*); Panama, Chagres (*Fendler*, 269), in meadows around Panama (*Seemann*, 117).—Colombia and Venezuela to Peru and Brazil. Hb. Kew.

3. **Piper artanthopse,** C. DC. in Mém. Soc. Phys. Genèv. xviii. t. 1. fig. 13, et in DC. Prodr. xvi. 1, p. 325.

Costa Rica, Aguacate (*Hoffmann*).

4. **Piper auritum,** H. B. K. Nov. Gen. et Sp. i. p. 54; DC. Prodr. xvi. 1, p. 320.

Schilleria aurita, Kth. in Linnæa, xiii. p. 713.

Artanthe aurita, Miq. Syst. Pip. p. 400.

Artanthe seemanniana, Miq. in Seem. Bot. Voy. 'Herald,' p. 199, t. 39.

South Mexico, region of Orizaba (*Botteri*, 221; *Bourgeau*, 2135); Guatemala (*Friedrichsthal*); Nicaragua, Chontales (*Seemann*, 157; *Tate*, 308, 368); Panama, Mamei (*S. Hayes*, 937).—Colombia. Hb. Kew.

β. **schiedeanum,** C. DC. in DC. Prodr. xvi. 1, p. 321.

Mexico (*Schiede & Deppe*).

γ. **amplifolium,** C. DC. in DC. Prodr. xvi. 1, p. 321.
COSTA RICA (*Hoffmann*).

5. **Piper begoniæfolium,** Hook. et Arn. Bot. Beech. Voy. p. 310; DC. Prodr. xvi. 1, p. 374.
MEXICO.

6. **Piper berlandieri,** C. DC. in DC. Prodr. xvi. 1, p. 295.
SOUTH MEXICO, between Tampico and Real del Monte (*Berlandier*), region of Orizaba and valley of Cordova (*Bourgeau*, 1491, 2316, 2649), Vera Cruz (*Gouin*). Hb. Kew.

7. **Piper berteroanum,** C. DC. in DC. Prodr. xvi. 1, p. 249.
Enckea discolor, Kth. in Linnæa, xiii. p. 595.
SOUTH MEXICO, shady woods of Jalapa (*Schiede & Deppe*; *Coulter*, 1397; *Galeotti*). —JAMAICA. Hb. Kew.

8. **Piper bourgeaui,** C. DC. in Linnæa, xxxvii. p. 358.
SOUTH MEXICO, Cuernavaca (*Bourgeau*, 1287). Hb. Kew.

9. **Piper bredemeyeri,** Jacq. Eclog. i. p. 125, t. 84; DC. Prodr. xvi. 1, p. 271.
Artanthe bredemeyeri, Miq. Syst. Pip. p. 429.
SOUTH MEXICO, banks of the Rio Grande, Guadalajara (*Galeotti*, 6014); GUATEMALA? Volcan de Fuego, ridge above Calderas (*Salvin*).—VENEZUELA to ECUADOR and BRAZIL. Hb. Kew.

10. **Piper caladiifolium,** C. DC. in DC. Prodr. xvi. 1, p. 330.
Artanthe caladiifolia, Miq. Syst. Pip. p. 387.
MEXICO.

11. **Piper candelarianum,** C. DC. in Linnæa, xxxvii. p. 357.
COSTA RICA, mountains of Candelaria (*Œrsted*).

12. **Piper cardiophyllum,** C. DC. in DC. Prodr. xvi. 1, p. 374.
Piper populifolium, Opiz in Presl's Reliq. Hænk. i. p. 160.
Artanthe cardiophylla, Presl, Epim. Bot. p. 225 (solum nomen).
Artanthe aegeirophylla, Miq. Syst. Pip. p. 391.
MEXICO (*Hænke*).

13. **Piper cartagoanum,** C. DC. in Linnæa, xxxvii. p. 350.
COSTA RICA, Cartago (*Œrsted*).

14. **Piper (Artanthe) casimirianum,** Hemsley, n. sp.

Ramis gracilibus glabrescentibus, foliis ampliusculis longiuscule petiolatis membranaceis ovato-ellipticis penninerviis, spicis breviter pedunculatis gracillimis foliis fere æquilongis, bracteis glabris.

Herba vel *frutex* cito glaber, ramis gracilibus, striatis. *Folia* alterna, longe petiolata, membranacea, ovato-elliptica, 7–9 poll. longa, 3–4 poll. lata, basi rotundata, apice acuminata, obtusiuscula,

cinereo-pulverulenta, venis primariis lateralibus utrinque 5–6 subtus prominentibus; petiolus 1½–2 poll. longus. *Spicæ* oppositifoliæ, breviter pedunculatæ, gracillimæ, foliis fere æquilongæ; bracteæ minutæ, glabræ; stamina 3?; stylus brevissimus, subinteger. *Fructus* deest.

NICARAGUA, Chontales (*Tate*, 383, 264). Hb. Kew.

15. **Piper ceanothifolium,** H. B. K. Nov. Gen. et Sp. i. p. 56; DC. Prodr. xvi. 1, p. 247; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 22).

Enkea ceanothifolia, Kth. in Linnæa, xiii. p. 597.

SOUTH MEXICO, Ejutla near Oaxaca (*Galeotti*, 6014).—WEST INDIES to BRAZIL.

16. **Piper chamissonis,** Steud. Nom. Bot; DC. Prodr. xvi. 1, p. 283.

Artanthe chamissonis, Miq. Syst. Pip. p. 457.

Steffensia oblonga, Kth. in Linnæa, xiii. p. 625.

Piper oblongum, Ch. et Schl. in Linnæa, v. p. 73 (excl. synon.).

SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), Cordillera of Oaxaca (*Galeotti*).

17. **Piper chinantlense,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 21); DC. Prodr. xvi. 1, p. 380.

SOUTH MEXICO, Chinantla, eastern Cordillera of Oaxaca, at 3000 feet (*Galeotti*, 6020).

18. **Piper colipanum,** C. DC. in Linnæa, xxxvii. p. 349.

SOUTH MEXICO, Colipa, Trapiche de la Concepcion, Mirador, and Chinantla (*Liebmann*). Hb. Kew.

19. **Piper cordillerianum,** C. DC. in DC. Prodr. xvi. 1, p. 332.

Pothomorphe lessertiana, Miq. Syst. Pip. p. 210, et Ill. Pip. t. 26.

SOUTH MEXICO, Cordillera of Vera Cruz, at 3500 feet (*Galeotti*, 6006).

20. **Piper cordovanum,** C. DC. in Linnæa, xxxvii. p. 352.

SOUTH MEXICO, valley of Cordova (*Bourgeau*).

21. **Piper cordulatum,** C. DC. in Seem. Journ. Bot. 1866, p. 217, et in DC. Prodr. xvi. 1, p. 298.

PANAMA, Chagres (*Fendler*, 267). Hb. Kew.

22. **Piper costaricense,** C. DC. in DC. Prodr. xvi. 1, p. 328.

COSTA RICA (*Hoffmann*).

23. **Piper crassispicatum,** Opiz in Presl's Reliq. Hænk. i. p. 152; DC. Prodr. xvi. 1, p. 373.

Artanthe crassispicatum, Miq. Syst. Pip. p. 521.

PANAMA (*Hænke*).

24. **Piper cuernavacanum,** C. DC. in Linnæa, xxxvii. p. 363.

SOUTH MEXICO, Cuernavaca, valley of Mexico (*Bourgeau*, 1386).

25. **Piper darienense,** C. DC. in DC. Prodr. xvi. 1, p. 374.

Ottonia glaucescens, Miq. in Seem. Bot. Voy. 'Herald,' p. 200.

Panama, San Lorenzo, Veraguas (*Seemann*, 1218). Hb. Kew.

In the Botany of the 'Herald,' the habitat given for this plant is "woods, Darien;" but there is no doubt that is an error, as Seemann's own writing in Kew Herbarium shows. Similar discrepancies are not uncommon in Seemann's Panama plants.

26. **Piper decipiens,** C. DC. in DC. Prodr. xvi. 1, p. 273.

Artanthe decipiens, Miq. Syst. Pip. p. 462.

South Mexico, Cordillera of Vera Cruz (*Galeotti*, 6016).

27. **Piper decrescens,** C. DC. in DC. Prodr. xvi. 1, p. 251.

Enckea decrescens, Miq. in Hook. Lond. Journ. Bot. iv. p. 440.

Mexico, Hacienda de los Naranjos (*Seemann*, 1455); Central America (*Beechey*). Hb. Kew.

β. **ovatum,** C. DC. in DC. Prodr. xvi. 1, p. 251.

Nicaragua, Granada (*Friedrichsthal*).

28. **Piper decurrens,** C. DC. in Seem. Journ. Bot. 1866, p. 215, et in DC. Prodr. xvi. 1, p. 302.

Costa Rica, mountains of Candelaria (*Hoffmann*).

29. **Piper descourtilsianum,** C. DC. in DC. Prodr. xvi. 1, p. 281.

South Mexico, Mirador, et Puente Nacional (*Linden*).

30. **Piper diandrum,** C. DC. in Linnæa, xxxvii. p. 364.

South Mexico, Pital, Colipa, Mirador, Santa Maria, Tlapacoya, &c. (*Liebmann*); Guatemala (*Bernoulli*, 267).

31. **Piper dilatatum,** Rich.; DC. Prodr. xvi. 1, p. 314.

Schilleria ulmifolia et *S. corylifolia,* Kth. in Linnæa, xiii. pp. 698, 699.

Artanthe ulmifolia et *A. corylifolia,* Miq. Syst. Pip. pp. 472 et 474.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1374; *Hahn*), valley of Cordova (*Bourgeau*, 1988); Panama, pastures around the city of Panama (*Seemann*, 116).—Colombia to Guiana and Brazil, and in the West Indies. Hb. Kew.

32. **Piper disjunctum,** C. DC. in Linnæa, xxxvii. p. 334.

South Mexico, between Huatusco and Jalapa, and at Santiago Estata, Oaxaca (*Liebmann*).

33. **Piper ellipticum,** Hook. et Arn. Bot. Beech. Voy. p. 443; DC. Prodr. xvi. 1, p. 374.

Nicaragua, Realejo (*Beechey*).

34. **Piper epigynium,** C. DC. in Linnæa, xxxvii. p. 346.

Costa Rica, Turrialva, 3000 feet (*Ærsted*).

35. **Piper fischerianum,** C. DC. in DC. Prodr. xvi. 1, p. 277.
MEXICO (*Karwinski*).

36. **Piper friedrichsthalii,** C. DC. in DC. Prodr. xvi. 1, p. 327.
GUATEMALA (*Friedrichsthal*). Hb. Kew.

37. **Piper globosum,** C. DC. in DC. Prodr. xvi. 1, p. 340.
COSTA RICA, mountains of Candelaria (*Œrsted*).

38. **Piper guanacastense,** C. DC. in Linnæa, xxxvii. p. 356 (sphalmate *guanacostense*).
NICARAGUA, Guanacaste (*Œrsted*).

39. **Piper grandifolium,** H. B. K. Nov. Gen. et Sp. i. p. 46; DC. Prodr. xvi. 1, p. 310.
Schilleria grandifolia, Kth. in Linnæa, xiii. p. 709.
Artanthe grandifolia et *A. riparia,* Miq. Syst. Pip. pp. 408 et 409.
Artanthe, sp. nova, Miq. in Seem. Bot. Voy. 'Herald,' p. 198.
PANAMA, village of Araijan (*Seemann*, 417). Hb. Kew.

40. **Piper hirsutum,** Sw. Prodr. Fl. Ind. Occ. p. 15; DC. Prodr. xvi. 1, p. 276.
Artanthe hirsuta, Miq. Syst. Pip. p. 446.
BRITISH HONDURAS, Belize (*March*); NICARAGUA, Chontales (*Seemann*, 156); PANAMA, near the city of Panama (*S. Hayes*, 740).—Southward to PERU and BRAZIL and in the WEST INDIES. Hb. Kew.

41. **Piper irazuanum,** C. DC. in Linnæa, xxxvii. p. 340.
COSTA RICA, Volcan de Irazu (*Œrsted*).

42. **Piper jalapense,** C. DC. in DC. Prodr. xvi. 1, p. 277.
Artanthe jalapense, Miq. Syst. Pip. p. 444.
SOUTH MEXICO, Jalapa (*Coulter*, 1401; *Galeotti*, 6009; *Schiede & Deppe*), Cordova (*Bourgeau*, 1493). Hb. Kew.

43. **Piper karwinskianum,** Kth.; DC. Prodr. xvi. 1, p. 327.
Schilleria karwinskiana, Kth. in Linnæa, xiii. p. 700.
Artanthe karwinskiana, Miq. Syst. Pip. p. 476.
SOUTH MEXICO, near the city of Mexico (*Karwinski*).

44. **Piper kunthii,** C. DC. in DC. Prodr. xvi. 1, p. 250.
Enckea kunthii, Miq. Syst. Pip. p. 363.
SOUTH MEXICO, Cordillera of Oaxaca, at 5500 feet (*Galeotti*, 6014).

45. **Piper lapathifolium,** Steud. Nom. Bot.; DC. Prodr. xvi. 1, p. 323.

Schilleria lapathifolia, Kth. in Linnæa, xiii. p. 714.
Piper macrophyllum, Ch. et Schl. in Linnæa, v. p. 73, non Sw.
Artanthe lapathifolia, Miq. Syst. Pip. p. 401.
Piper jalapense, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 21).

South Mexico, near Jalapa and Mirador, 3000 to 4500 feet (*Galeotti,* 6012).—Jamaica; Guiana. Hb. Kew.

46. **Piper ledebourii,** C. DC. in DC. Prodr. xvi. 1, p. 281.

Mexico (ex *De Candolle*).—Brazil.

47. **Piper lepturum,** Kth.; DC. Prodr. xvi. 1, p. 320.

Schilleria leptura, Kth. in Linnæa, xiii. p. 679.
Artanthe leptura, Miq. Syst. Pip. p. 523, et in Linnæa, xx. p. 172.

South Mexico, near Oaxaca (ex *De Candolle*).—Brazil.

48. **Piper liebmannii,** C. DC. in Linnæa, xxxvii. p. 344.

South Mexico, Mirador, Aguas Santas and Hacienda de Savon (*Liebmann*). Hb. Kew.

49. **Piper lindenii,** C. DC. in DC. Prodr. xvi. 1, p. 248.

Enckea lindenii, Miq. Syst. Pip. p. 368, et Ill. Pip. p. 66, t. 66.

South Mexico, Teapa, Tabasco (*Linden*).

50. **Piper linearifolium,** C. DC. in Linnæa, xxxvii. p. 355.

Costa Rica, Hacienda de Santa Rosa (*Ærsted*).

51. **Piper lineatum,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 35, t. 60; DC. Prodr. xvi. 1, p. 311.

Schilleria lineata, Kth. in Linnæa, xiii. p. 704.
Artanthe lineata, Miq. Syst. Pip. p. 459.

Guatemala (*Friedrichsthal*).—Ecuador; Peru.

52. **Piper lucæanum,** Kth.; DC. Prodr. xvi. 1, p. 322.

Artanthe lucæanum, Miq. Syst. Pip. p. 523, et in Linnæa, xx. p. 172.
Schilleria lucæana, Kth. in Linnæa, xiii. p. 678.

Panama, Chagres (*Fendler,* 266). Hb. Kew.

53. **Piper macrophyllum,** H. B. K. Nov. Gen. et Sp. i. p. 46; DC. Prodr. xvi. 1, p. 272.

Schilleria macrophylla, Kth. in Linnæa, xiii. p. 715.
Artanthe macrophylla, Miq. Syst. Pip. p. 423.

South Mexico, Mirador (*Linden*).—Peru; West Indies.

54. **Piper marginatum,** Jacq. Ic. Pl. Rar. ii. p. 2, t. 215; DC. Prodr. xvi. 1, p. 245.

Schilleria marginata, Kth. in Linnæa, xiii. p. 718.
Artanthe caudata, Miq. Syst. Pip. p. 380.
Schilleria caudata, Kth. in Linnæa, xiii. p. 716.

South Mexico, region of Orizaba (*Bourgeau*, 1959, 2459, 2168); Guatemala, Volcan de Fuego, 3800 feet (*Salvin*), Mazatenango (*Bernoulli*, 1200); Nicaragua, Chontales (*Tate*, 281, 366); Panama, common in waste places about Panama (*S. Hayes*, 741; *Seemann*, 114).—Southward to Brazil and Peru and in the West Indies. Hb. Kew.

55. **Piper martensiana,** C. DC. in DC. Prodr. xvi. 1, p. 251.
New Spain (Hb. *Pavon*).

56. **Piper medium,** Jac. Ic. Pl. Rar. i. p. 2, t. 8; DC. Prodr. xvi. 1, p. 246.
Enckea plantaginea, Kth. in Linnæa, xiii. p. 599; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 23).
Enckea swartzii, Griseb. Fl. Brit. W. Ind. p. 169.
South Mexico, Mirador, 3800 feet (*Galeotti*, 6018).—West Indies and Brazil.

57. **Piper megalophyllum,** C. DC. in Linnæa, xxxvii. p. 357.
South Mexico, Pital and Mirador (*Liebmann*).

β. **connivens,** C. DC. loc. cit.
South Mexico, Mirador (*Liebmann*).

58. **Piper melanostictum,** C. DC. in DC. Prodr. xvi. 1, p. 274.
Artanthe melanostictum, Miq. Syst. Pip. p. 404.
South Mexico, Tabasco (*Linden*).

59. **Piper melastomoides,** Ch. et Schl. in Linnæa, v. p. 74; DC. Prodr. xvi. 1, p. 245.
Schilleria melastomoides, Kth. in Linnæa, xiii. p. 724.
Callianira melastomoides, Miq. Syst. Pip. p. 345.
South Mexico, Jalapa (*Galeotti*; *Schiede*), region of Orizaba (*Bourgeau*, 2966; *Botteri*, 1154), Mirador (*Linden*). Hb. Kew.

60. **Piper mexicanum,** C. DC. in DC. Prodr. xvi. 1, p. 276.
Piper hispidum, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 21).
Artanthe mexicana, Miq. Syst. Pip. p. 458.
South Mexico, Cordillera of Oaxaca, 4500 to 5500 feet (*Galeotti*, 6015).

61. **Piper micranthera,** C. DC. in Linnæa, xxxvii. p. 354.
Nicaragua, La Barranca (*Œrsted*).

62. **Piper miradorense,** C. DC. in DC. Prodr. xvi. 1, p. 380.
Piper patulum, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 18), non Opiz.
South Mexico, Mirador, at 3000 feet (*Galeotti*, 6001).

63. **Piper misantlense,** C. DC. in DC. Prodr. xvi. 1, p. 286.
Mexico, Misantla (*Fischer* ex *De Candolle*).

64. **Piper mollicomum,** Kth.; DC. Prodr. xvi. 1, p. 316.

Steffensia mollis, Kth. in Linnæa, xiii. p. 648.

Artanthe mollicoma, Miq. Syst. Pip. p. 438, et in Linnæa, xx. p. 155.

Guatemala (*Warscewicz*); Costa Rica (*Hoffmann*); Panama (*Seemann*).—Southward to Peru and Brazil. Hb. Kew.

65. **Piper muelleri,** C. DC. in DC. Prodr. xvi. 1, p. 243.

South Mexico, Orizaba (*Müller*).

66. **Piper multinervium,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 20); DC. Prodr. xvi. 1, p. 372.

South Mexico, near Jalapa and Mirador, at 2500 to 4000 feet (*Galeotti*, 6008).

67. **Piper naranjoanum,** C. DC. in Linnæa, xxxvii. p. 363.

Costa Rica, Naranjo, at 5000 feet (*Œrsted*).

68. **Piper neesianum,** C. DC. in DC. Prodr. xvi. 1, p. 256.

South Mexico, Papantla (*Liebmann*, 18), Orizaba (*Botteri*, 192); Nicaragua (*Tate*, 367). Hb. Kew.

69. **Piper nervosum,** C. DC. in DC. Prodr. xvi. 1, p. 374.

Piper patens, Hook. et Arn. Bot. Beech. Voy. p. 310, non Opiz.

Mexico.

70. **Piper nitidulum,** Opiz in Presl's Reliq. Hænk. i. p. 154, t. 27. fig. 1; DC. Prodr. xvi. 1, p. 374.

Artanthe nitidula, Miq. Syst. Pip. p. 534.

Mexico (*Hœnke*).

71. **Piper novæ-hispaniæ,** C. DC. in DC. Prodr. xvi. 1, p. 301.

New Spain (Hb. *Pavon*).

72. **Piper nudum,** C. DC. in DC. Prodr. xvi. 1, p. 325.

New Spain (Hb. *Pavon*).

73. **Piper oaxacanum,** C. DC. in DC. Prodr. xvi. 1, p. 274.

South Mexico, Oaxaca.

74. **Piper obliquum,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 37, t. 63. fig. *a*; DC. Prodr. xvi. 1, p. 306.

Steffensia obliqua, Kth. in Linnæa, xiii. p. 663.

Artanthe magnifica, Miq. Syst. Pip. p. 391, et Ill. Pip. t. 71.

Nicaragua, Chontales (*Tate*, 318, 369). Hb. Kew.

75. **Piper oblongum,** H. B. K. Nov. Gen. et Sp. i. p. 52; DC. Prodr. xvi. 1, p. 312; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 20).

Schilleria oblonga, Kth. in Linnæa, xiii. p. 696.

Artanthe oblonga, Miq. Syst. Pip. p. 480.

South Mexico, Jalapa and Mirador (*Galeotti*, 6009).—Venezuela.

76. **Piper œrstedii,** C. DC. in Linnæa, xxxvii. p. 359.
COSTA RICA (*Œrsted.*)

77. **Piper ottonis,** C. DC. in DC. Prodr. xvi. 1, p. 332.
Pothomorphe ottonis, Miq. Syst. Pip. p. 207, et Ill. Pip. t. 25, et in Seem. Bot. Voy. 'Herald,' p. 198.
PANAMA, Bahia Honda, Veraguas (*Seemann*).—VENEZUELA. Hb. Kew.

78. **Piper pachystachyon,** C. DC. in Seem. Journ. Bot. 1866, p. 216, et in DC. Prodr. xvi. 1, p. 304.
COSTA RICA (*Hoffmann*).—COLOMBIA.

79. **Piper panamense,** C. DC. in Seem. Journ. Bot. 1866, p. 216, et in DC. Prodr. xvi. 1, p. 273.
PANAMA, Chagres (*Fendler*, 270). Hb. Kew.

80. **Piper papantlense,** C. DC. in DC. Prodr. xvi. 1, p. 338.
SOUTH MEXICO, woods of Papantla (*Fischer* ex *De Candolle*).

81. **Piper patulum,** Bertol. Fl. Guat. p. 7, t. 1; DC. Prodr. xvi. 1, p. 374.
GUATEMALA, Esquintla (*Velasquez*).

82. **Piper peltatum,** Linn. Sp. Pl. p. 42; DC. Prodr. xvi. 1, p. 331; Descour. Fl. Antill. t. 236.
Heckeria peltata, Kth. in Linnæa, xiii. p. 565.
Pothomorphe peltata, Miq. Comm. Phytogr. p. 45, t. 4. fig. *e.*
PANAMA (*S. Hayes*, 745; *Fendler*). Hb. Kew.

83. **Piper persicariæfolium,** Kth., β. **cumingianum,** C. DC. in DC. Prodr. xvi. 1, p. 314.
PANAMA and COLOMBIA (*Cuming*, 1290). Hb. Kew.

84. **Piper pilosiusculum,** Opiz in Presl's Reliq. Hænk. i. p. 154, t. 29. fig. 1; DC. Prodr. xvi. 1, p. 374.
Artanthe pilosiuscula, Miq. Syst. Pip. p. 476.
PANAMA (*Hænke*).

85. **Piper plantagineum,** Ch. et Schl. in Linnæa, vi. p. 353, non Lam.; DC. Prodr. xvi. 1, p. 330.
Steffensia plantaginea, Kth. in Linnæa, xiii. p. 672.
Artanthe plantaginea, Miq. Syst. Pip. p. 389.
Piper commutatum, Steud. Nom. Bot.
SOUTH MEXICO (*Schiede & Deppe*). Hb. Kew.

86. **Piper platyphyllum,** C. DC. in DC. Prodr. xvi. 1, p. 375.
Enckea platyphylla, Benth. in Bot. Voy. 'Sulphur,' p. 167.
SOUTH MEXICO, Manzanilla Bay (*Barclay*).

87. **Piper pothomorphe,** C. DC. in DC. Prodr. xvi. 1, p. 308.
Artanthe pothomorphe, Miq. Syst. Pip. p. 403.
South Mexico, Cordillera of Vera Cruz at 3500 feet (*Galeotti*, 6117).

88. **Piper prismaticum,** C. DC. in Linnæa, xxxvii. p. 342.
Costa Rica, Turrialba (*Œrsted*).

89. **Piper pseudoasperifolium,** C. DC. in DC. Prodr. xvi. 1, p. 318.
South Mexico, Oaxaca.

90. **Piper pseudofuligineum,** C. DC. in Linnæa, xxxvii. p. 355.
Costa Rica, mountains of Candelaria, at 5000 feet (*Œrsted*).

91. **Piper pseudolindenii,** C. DC. in Linnæa, xxxvii. p. 335.
Nicaragua, Realejo (*Œrsted*).

β. **magnifolium,** C. DC. loc. cit. p. 336.
Costa Rica, Naranjo (*Œrsted*).

92. **Piper pseudopropinquum,** C. DC. in Linnæa, xxxvii. p. 341.
Costa Rica, Turrialba (*Œrsted*).

93. **Piper realejoanum** (sphalmate *realgoanum*), C. DC. in Linnæa, xxxvii. p. 335.
Nicaragua, Realejo (*Œrsted*).

94. **Piper reticulatum,** Linn. Sp. Pl. p. 41; DC. Prodr. xvi. 1, p. 295.
Enckea reticulata, Miq. Syst. Pip. p. 365.
Artanthe schlechtendalii, Miq. loc. cit. p. 386.
South Mexico, Misantla (*Schiede & Deppe*).—Jamaica.

95. **Piper reticulosum,** Opiz in Presl's Reliq. Hænk. p. 155; DC. Prodr. xvi. 1, p. 374.
Artanthe reticulosa, Miq. Syst. Pip. p. 554.
Mexico (*Hœnke*).—Ecuador.

96. **Piper rohrii** β. **crassum,** C. DC. in DC. Prodr. xvi. 1, p. 296.
South Mexico, Oaxaca.
The typical form is from Guiana and Brazil.

97. **Piper ruizianum,** C. DC. in DC. Prodr. xvi. 1, p. 308.
New Spain (Hb. *Pavon*).

98. **Piper salicinum,** Opiz in Presl's Reliq. Hænk. i. p. 150; DC. Prodr. xvi. 1, p. 374.
Mexico; Panama.

99. **Piper sanctum,** Schl., ex Miq. in Linnæa, xviii. p. 714; DC. Prodr. xvi. 1, p. 330.

South Mexico, Atlocomulco (*Schiede*).

100. **Piper sanjoseanum,** C. DC. in Linnæa, xxxvii. p. 351.

Costa Rica, San José (*Ærsted*).

101. **Piper scabrifolium,** Hook. et Arn. Bot. Beech. Voy. p. 310; DC. Prodr. xvi. 1, p. 374.

Mexico?

102. **Piper schlechtendalianum,** C. DC. in DC. Prodr. xvi. 1, p. 324.

Enckea schlechtendalii, Miq. Syst. Pip. p. 362.

South Mexico, Misantla (*Schiede & Deppe*). Hb. Kew.

103. **Piper septuplinervium,** C. DC. in DC. Prodr. xvi. 1, p. 313.

Artanthe septuplinervia, Miq. in Seem. Bot. Voy. 'Herald,' p. 199, t. 40.

Panama (*Seemann*, 1066). Hb. Kew.

104. **Piper smilacifolium,** H. B. K. Nov. Gen. et Sp. i. p. 56; DC. Prodr. xvi. 1, p. 245; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 22).

Enckea smilacifolia, Kth. in Linnæa, xiii. p. 605; Miq. Syst. Pip. p. 351.

South Mexico, damp woods at Mirador and Zacuapan, at 3000 feet (*Galeotti*, 6010); Panama, in woods near San Juan and Old Panama (*Seemann*, 418).—Venezuela; West Indies. Hb. Kew.

105. **Piper sororium,** C. DC. in DC. Prodr. xvi. 1, p. 295.

Artanthe sororia, Miq. in Hook. Lond. Journ. Bot. iv. p. 443; Benth. Bot. Voy. 'Sulphur,' p. 167.

Honduras, Gulf of Fonseca (*Sinclair*). Hb. Kew.

106. **Piper stipulaceum,** Opiz in Presl's Reliq. Hænk. i. p. 160; DC. Prodr. xvi. 1, p. 375.

Enckea stipulacea, Kth. in Linnæa, xiii. p. 600; Miq. Syst. Pip. p. 366.

Ottonia stipulacea, Presl, Epim. Bot. p. 231.

Mexico (*Hænke*).

107. **Piper striatum,** C. DC. in Linnæa, xxxvii. p. 345.

Costa Rica, San José (*Ærsted*).

108. **Piper subfuscum,** C. DC. in Seem. Journ. Bot. 1866, p. 217, et DC. Prodr. xvi. 1, p. 305.

Costa Rica, Alto de la Cruz (*Hoffmann*).

109. **Piper teapense,** C. DC. in DC. Prodr. xvi. 1, p. 260.

South Mexico, Teapa, Tabasco (*Linden*).

110. **Piper tenuifolium,** C. DC. in DC. Prodr. xvi. 1, p. 321.

New Spain (Hb. *Pavon*).

111. **Piper tigerianum,** C. DC. in Seem. Journ. Bot. 1866, p. 300, et DC. Prodr. xvi. 1, p. 250.

Honduras, Isle de Tigré, Gulf of Fonseca (*Barclay*); Nicaragua, Realejo (*Barclay*).

112. **Piper trinerve,** C. DC. in DC. Prodr. xvi. 1, p. 292.

Artanthe trinervis, Miq. in Seem. Bot. Voy. 'Herald,' p. 200, t. 41.

Panama, Veraguas (*Seemann*, 1217), woods near the city of Panama (*S. Hayes*, 739). Hb. Kew.

113. **Piper triquetrum,** Opiz in Presl's Reliq. Hænk. i. p. 160; DC. Prodr. xvi. 1, p. 375.

Enckea californica, Kth. in Linnæa, xiii. p. 601; Miq. Syst. Pip. p. 363?

Mexico (*Hænke*).

114. **Piper tuberculatum,** Jacq. Ic. Pl. Rar. ii. p. 2, t. 211; DC. Prodr. xvi. 1, p. 265.

Piper nutans, Opiz in Presl's Reliq. Hænk. i. p. 156, t. 28. fig. 2.
Steffensia tuberculata, Kth. in Linnæa, xiii. p. 614.
Artanthe tuberculata, Miq. Syst. Pip. p. 497.
Artanthe decurrens, Miq. loc. cit. p. 402.

South Mexico, San Blas to Tepic (*Coulter*, 1395), Teapa, Tabasco (*Linden*); Guatemala (*Friedrichsthal*); Panama (*Seemann*, 115; *S. Hayes*, 744).—Southward to Peru and Brazil and in the West Indies. Hb. Kew.

β. **minus,** C. DC. in DC. Prodr. xvi. 1, p. 266.

Costa Rica (*Hoffmann*).—Colombia.

115. **Piper turrialvanum,** C. DC. in Linnæa, xxxvii. p. 342.

Costa Rica, Turrialba (*Œrsted*).

116. **Piper uhdei,** C. DC. in DC. Prodr. xvi. 1, p. 248.

Mexico (*Uhde*).

117. **Piper umbellatum,** Linn. Sp. Pl. p. 43; DC. Prodr. xvi. 1, p. 332; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 23).

Heckeria umbellata, Kth. in Linnæa, xiii. p. 569.
Pothomorphe umbellata, Miq. Comm. Phytogr. p. 36, et Syst. Pip. p. 208.

South Mexico, Mirador &c. (*Galeotti*, 6006); Panama (*S. Hayes*).—Southward to Peru and Brazil and in the West Indies. Hb. Kew.

118. **Piper unguiculatum,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 34, t. 57. fig. *b*; DC. Prodr. xvi. 1, p. 249.

Enckea unguiculata, Kth. in Linnæa, xiii. p. 592; Miq. Syst. Pip. p. 352.
Enckea glaucescens, Kth. loc. cit. p. 593; Miq. loc. cit. p. 354.

Piper glaucescens, Jacq. Eclog. t. 76.
Piper pyrifolium, Opiz in Presl's Reliq. Hænk. i. p. 158, non Vahl.
Piper terminale, H. B. K. Nov. Gen. et Sp. i. p. 57.

SOUTH MEXICO, Chila, Puebla (*Andrieux*, 96), Vera Cruz to Orizaba (*Müller*, 1256; *Botteri*, 279), near Jalapa &c. (*Humboldt & Bonpland*).—COLOMBIA to PERU and GUIANA, and in the WEST INDIES. Hb. Kew.

119. **Piper (Artanthe) urostachyum,** Hemsley, n. sp. (Tab. LXXII.)

Novellis ferrugineo-pilosis, foliis breviter petiolatis membranaceis rhomboideo-ellipticis ovatisve basi cordatis, spicis brevibus longiuscule pedunculatis rhachi supra flores longiuscule producta, staminibus 3, stylis 3.

Herba vel *frutex*, novellis (præsertim ramulis pedunculisque) dense ferrugineo-pilosis. *Folia* alterna, breviter petiolata, membranacea, rhomboideo-elliptica vel ovata, 4–6 poll. longa, $2\frac{1}{2}$–3 poll. lata, basi leviter oblique cordata, sinu clauso, apice acuminata, acuta vel obtusa, utrinque scabrida, venis lateralibus primariis utrinque 4–5, apicem versus excurrentibus. *Spicæ* oppositifoliæ, 9–12 lineas longæ; pedunculi $1\frac{1}{2}$–2 poll. longi; rhachis pilosa, ultra flores 6–9 lineas producta; bracteæ ciliatæ; stamina 3; styli 3. *Fructus* deest.

NICARAGUA, Chontales (*Tate*, 319, 375). Hb. Kew.

EXPLANATION OF TAB. LXXII.

Figs. 1 and 2, flowers with subtending bract: enlarged.

120. **Piper variifolium,** C. DC. in DC. Prodr. xvi. 1, p. 308.

Enckea variifolia, Miq. Syst. Pip. p. 355.

MEXICO (*Andrieux*, 133).

121. **Piper veraguense,** C. DC. in DC. Prodr. xvi. 1, p. 294.

COSTA RICA (*Warscewicz*); PANAMA, Veraguas (*Warscewicz*).

122. **Piper verbascifolium,** C. DC. in DC. Prodr. xvi. 1, p. 258.

Artanthe verbascifolia, Miq. Syst. Pip. p. 431, et in Hook. Lond. Journ. Bot. iv. p. 455.
Artanthe leucophylla, Miq. Syst. Pip. p. 460, et in Hook. Lond. Journ. Bot. iv. p. 457.
Piper leucophyllum, C. DC. in DC. Prodr. xvi. 1, p. 278?

SOUTH MEXICO, Chila, Puebla (*Andrieux*, 94), Cuernavaca (*Bourgeau*, 411). Hb. Kew.

123. **Piper verruculosum,** C. DC. in DC. Prodr. xvi. 1, p. 303.

COSTA RICA, mountains of Candelaria (*Hoffmann*).

124. **Piper wagneri,** C. DC. in DC. Prodr. xvi. 1, p. 302.

PANAMA, Chiriqui (*Wagner*),

125. **Piper yucatanense,** C. DC. in Linnæa, xxxvii. p. 334.

SOUTH MEXICO, Yucatan (*Linden*).

126. **Piper zacuapanum,** C. DC. in DC. Prodr. xvi. 1, p. 330.

Piper tiliæfolium, Ch. et Schl. in Linnæa, vi. p. 352, non Ham.; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 23).

South Mexico, woods of Misantla (*Schiede & Deppe*), forests of Zacuapan, 2500 to 3000 feet (*Galeotti*, 6017).

3. PEPEROMIA.

Peperomia, Ruiz et Pav. Fl. Peruv. et Chil. i. p. 29; Benth. et Hook. Gen. Plant. iii. p. 132.

Annual and perennial herbs, sometimes woody at the base. About 400 species have been described; and they are generally dispersed in warm countries, though most numerous in America, where they extend from Mexico and Florida to Chili.

1. **Peperomia alata,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 31, t. 48. fig. *b*; DC. Prodr. xvi. 1, p. 418.

South Mexico, Vera Cruz to Orizaba (*Müller*, 346; *Bourgeau*, 3107).—Venezuela and Colombia to Peru, and in the West Indies. Hb. Kew.

2. **Peperomia aguacatensis,** C. DC. in Linnæa, xxxvii. p. 376.

Costa Rica, Aguacate (*Ærsted*).

3. **Peperomia amantlanensis,** C. DC. in Linnæa, xxxvii. p. 369.

South Mexico, Amantla, Oaxaca (*Liebmann*).

4. **Peperomia arboricola,** C. DC. in Linnæa, xxxvii. p. 374.

South Mexico, Mirador (*Liebmann*).

5. **Peperomia asarifolia,** Schl. et Ch. in Linnæa, v. p. 75; Dietr. Sp. Pl. i. p. 166; DC. Prodr. xvi. 1, p. 398; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 18).

Piper asarifolium, Dietr. Synop. Pl. i. p. 111.

South Mexico, between Tehuantepec and Acapulco (*Galeotti*, 6022), without locality (*Schiede & Deppe*).

In the 'Prodromus' this species is incorrectly attributed to Dietrich, and there is great confusion in the references.

6. **Peperomia bernouillii** (recte *Bernoullii*), C. DC. in Linnæa, xxxvii. p. 367.

Guatemala, Mazatenango (*Bernoulli*, 37). Hb. Kew.

7. **Peperomia blanda,** H. B. K. Nov. Gen. et Sp. i. p. 67; Hook. Exot. Fl. t. 21; DC. Prodr. xvi. 1, p. 458.

Piper blandum, Jacq. Ic. Pl. Rar. ii. t. 218.

New Spain (Hb. *Pavon*).—Colombia to Peru.

β. **reticulata,** C. DC. in DC. Prodr. xvi. 1, p. 459.

South Mexico, region of Orizaba (*Botteri; Sallé*).

8. **Peperomia botterii,** C. DC. in DC. Prodr. xvi. 1, p. 459.

South Mexico, region of Orizaba (*Botteri; Sallé*). Hb. Kew.

9. **Peperomia bourgeaui,** C. DC. in Linnæa, xxxvii. p. 370.
SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3230). Hb. Kew.

10. **Peperomia camptotricha,** Miq. Syst. Pip. p. 144, et Ill. Pip. t. 19; DC. Prodr. xvi. 1, p. 461.
SOUTH AMERICA, Hacienda de la Laguna (*Schiede*).

11. **Peperomia carthaginensis,** C. DC. in DC. Prodr. xvi. 1, p. 377.
COSTA RICA, Cartago (*Ærsted*).

12. **Peperomia ciliolata,** Miq. in Hook. Lond. Journ. Bot. vi. p. 459; DC. Prodr. xvi. 1, p. 477.
MEXICO?

13. **Peperomia claytonioides,** Kth. in Ind. Sem. Hort. Berol. 1847; DC. Prodr. xvi. 1, p. 400.
GUATEMALA.

14. **Peperomia consoquitlana,** C. DC. in Linnæa, xxxvii. p. 379.
SOUTH MEXICO, Consoquitla, Mirador (*Liebmann*).

15. **Peperomia cordovana,** C. DC. in Linnæa, xxxvii. p. 374.
SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1804). Hb. Kew.

16. **Peperomia cordulata,** C. DC. in Seem. Journ. Bot. 1866, p. 137; DC. Prodr. xvi. 1, p. 411.
PANAMA, Chagres (*Fendler*, 265). Hb. Kew.

17. **Peperomia coulteri,** C. DC. in DC. Prodr. xvi. 1, p. 424.
SOUTH MEXICO, Zimapan (*Coulter*, 1400). Hb. Kew.

18. **Peperomia cyclophylla,** Miq. in Mart. Fl. Bras. iv. 1, p. 219, et in Seem. Bot. Voy. 'Herald,' p. 198; C. DC. in DC. Prodr. xvi. 1, p. 444.
Acrocarpidium rotundifolium, Miq. Syst. Pip. p. 62, excl. syn. H. B. K.
Piper rotundifolium, Linn. Sp. Pl. p. 42.
PANAMA, near the town of Gorgona (*Seemann*, 607).—Southward to PERU and BRAZIL and in the WEST INDIES. Hb. Kew.

The synonymy of this species, as given above, may be altogether wrong. We have followed Miquel, though there may be reasons for the deviations by C. de Candolle in the 'Prodromus,' where *Peperomia cyclophylla* is described as a new species from the same specimens referred to the *P. cyclophylla*, Miq., which Miquel regarded as the same as his *Acrocarpidium rotundifolium*. C. de Candolle refers *Acrocarpidium rotundifolium*, Miq., to two different species, namely to *Peperomia circinata*, Link, and to *P. nummularifolia*, H. B. K. *Piper rotundifolium*, Linn., is likewise referred to the latter.

19. **Peperomia dendrophila,** Schl. et Cham. in Linnæa, v. p. 74; DC. Prodr. xvi. 1, p. 409; Miq. Ill. Pip. t. 7.

Piper galeottianum, Mart. et Gal. in Bull. Acad. Brux. x. (reprint p. 18).

South Mexico, Jalapa (*Schiede & Deppe*; *Galeotti*, 6002), Mirador (*Linden*); Costa Rica (*Hoffmann*). Hb. Kew.

Grisebach (Fl. Brit. W. Ind. p. 165) gives the distribution of this species as Cuba, probably to Brazil.

20. **Peperomia deppeana,** Schl. et Cham. in Linnæa, v. p. 75; DC. Prodr. xvi. 1, p. 457.

Piper deppeanum, D. Dietr. Encycl. Pfl. i. p. 124.

South Mexico, without locality (*Deppe*).

21. **Peperomia distachya,** A. Dietr. Sp. Pl. i. p. 156; DC. Prodr. xvi. 1, p. 428.

Piper distachyon, Linn. Sp. Pl. p. 42.

Panama (*Seemann*, 608).—Southward to Brazil. Hb. Kew.

22. **Peperomia donaguiana,** C. DC. in Linnæa, xxxvii. p. 382.

South Mexico, Donaguia, and Trapiche de la Concepcion, Oaxaca (*Liebmann*).

23. **Peperomia drusophila,** C. DC. in Linnæa, xxxvii. p. 372.

South Mexico, Potrero de Consoquitla, Mirador, and San Antonio, Huatusco (*Liebmann*).

24. **Peperomia edulis,** Miq. in Linnæa, xviii. p. 711; DC. Prodr. xvi. 1, p. 450.

South Mexico, frigid region (*Schiede*).

25. **Peperomia epidendron,** C. DC. in Linnæa, xxxvii. p. 379.

South Mexico, near Mirador (*Liebmann*).

26. **Peperomia erasmia,** C. DC. in DC. Prodr, xvi. 1, p. 397.

Erasmia floribunda, Miq. in Diar. Inst. Reg. Sc. Nederl. 1842, Syst. Pip. p. 200, et Ill. Pip. t. 24.

South Mexico, Jalapa (*Galeotti*). Hb. Kew.

27. **Peperomia fraseri,** C. DC. in DC. Prodr. xvi. 1, p. 398.

New Spain (*Hb. Pavon*).—Ecuador.

28. **Peperomia fugax,** C. DC. in Linnæa, xxxvii. p. 370.

South Mexico, Mirador (*Liebmann*).

29. **Peperomia galeottiana,** Hook. Ic. Pl. t. 327; DC. Prodr. xvi. 1, p. 395.

South Mexico, Jalapa (*Galeotti*). Hb. Kew.

30. **Peperomia galeottii,** Miq. Syst. Pip. p. 190; DC. Prodr. xvi. 1, p. 427.

South Mexico, Cordillera of Vera Cruz, at 3000 feet (*Galeotti*, 6003).

31. **Peperomia galioides,** H. B. K. Nov. Gen. et Sp. i. p. 71, t. 17; DC. Prodr. xvi. 1, p. 463 (varietates); Miq. Syst. Pip. p. 156 et Ill. Pip. t. 20.

South Mexico, valley of Mexico (*Bourgeau*, 1126)? Costa Rica (*Hoffmann*).—Colombia to Brazil and in the West Indies.

32. **Peperomia glabella,** A. Dietr. Sp. Pl. i. p. 156; DC. Prodr. xvi. 1, p. 417; Griseb. Fl. Brit. W. Ind. p. 165.

Nicaragua (*Tate*, 356, 358, 361, 464).—Jamaica to Trinidad. Hb. Kew.

33. **Peperomia guadalupensis,** C. DC. in DC. Prodr. xvi. 1, p. 416.

δ. **liebmanniana,** C. DC. in Linnæa, xxxvii. p. 374.

South Mexico, Mirador (*Liebmann*).

34. **Peperomia hernandiæfolia,** A. Dietr. Sp. Pl. i. p. 157; DC. Prodr. xvi. 1, p. 436; Griseb. Fl. Brit. W. Ind. p. 166.

South Mexico, Orizaba (*Botteri*, 1160, in part).—West Indies. Hb. Kew.

35. **Peperomia hispidula,** A. Dietr. Sp. Pl. i. p. 165; DC. Prodr. xvi. 1, p. 397.

Piper hispidulum, Sw. Ic. Pl. Ind. Occ. t. 4.

Acrocarpidium hispidulum, Miq. Syst. Pip. p. 54.

Costa Rica, Volcan de Barba (*Hoffmann*).—Jamaica; Venezuela.

36. **Peperomia hoffmannii,** C. DC. in Seem. Journ. Bot. 1866, p. 133, et DC. Prodr. xvi. 1, p. 396.

Costa Rica (*Hoffmann*).

37. **Peperomia huatuscoana,** C. DC. in Linnæa, xxxvii. p. 383.

South Mexico, Dos Puentes, between Totutla and Huatusco (*Liebmann*, 129). Hb. Kew.

38. **Peperomia jarisiana,** C. DC. in Linnæa, xxxvii. p. 382.

Costa Rica, Volcan de Jaris at 3000 feet (*Œrsted*).

39. **Peperomia lanceolatopeltata,** C. DC. in Seem. Journ. Bot. 1866, p. 136; DC. Prodr. xvi. 1, p. 410.

Costa Rica (*Hoffmann*).—Venezuela.

40. **Peperomia langsdorffii,** Miq. Syst. Pip. p. 116; DC. Prodr. xvi. 1, p. 443.

Micropiper langsdorffii, Miq. Comm. Phytogr. p. 52, t. 8. fig. F.

South Mexico, Orizaba (*Botteri*, 575, 867).—Brazil. Hb. Kew.

The Mexican plant may be a different species.

41. **Peperomia lancifolia,** Hook. Ic. Pl. t. 332; DC. Prodr. xvi. 1, p. 426.

South Mexico, Jalapa (*Galeotti*); Costa Rica, Volcan de Barba (*Hoffmann*). Hb. Kew.

42. **Peperomia leptophylla,** Miq. in Linnæa, xviii. p. 712; DC. Prodr. xvi. 1, p. 456.

Mexico (*Schiede*).

43. **Peperomia liebmannii,** C. DC. in Linnæa, xxxvii. p. 383.
South Mexico, Trapiche de la Concepcion and Comaltepec, Oaxaca (*Liebmann*).

44. **Peperomia lignescens,** C. DC. in Seem. Journ. Bot. 1866, p. 137, et in DC. Prodr. xvi. 1, p. 407.
Costa Rica (*Hoffmann*).

45. **Peperomia lindeniana,** Miq. in Pip. Nov. N. Holl. in Meded. Kon. Akad. Weten. (reprint, p. 6); DC. Prodr. xvi. 1, p. 453.
South Mexico, peak of Orizaba at 10,000 feet (*Linden*, 132).

46. **Peperomia magnoliæfolia,** A. Dietr. Sp. Pl. i. p. 153; Miq. Syst. Pip. p. 97; DC. Prodr. xvi. 1, p. 427.
Piper magnoliæfolium, Jacq. Ic. Pl. Rar. t. 213.
South Mexico, region of Orizaba (*Bourgeau*, 2964); Nicaragua, Chontales (*Tate*, 152).—Northern part of South America and the West Indies.—Hb. Kew.

47. **Peperomia matlalucaensis,** C. DC. in Linnæa, xxxvii. p. 375.
South Mexico, around Matlaluca (*Liebmann*).

48. **Peperomia melanostigma,** Miq. Syst. Pip. p. 90; DC. Prodr. xvi. 1, p. 408.
Micropiper melanostigma, Miq. Comm. Phytogr. p. 5, t. 9. fig. A.
Costa Rica.—Cuba; Jamaica; Guiana.

49. **Peperomia metapalcoensis,** C. DC. in DC. Prodr. xvi. 1, p. 416.
Acrocarpidium mexicanun, Miq. Syst. Pip. 53.
Peperomia rotundifolia, Schl. et Cham. in Linnæa, vi. p. 353, non H. B. K.
South Mexico, between Metapalco and Cuapa (*Schiede & Deppe*), Santa Maria, Tlapacoya (*Liebmann*); Nicaragua, Chontales (*Tate*, 357; *Seemann*, 155). Hb. Kew.

50. **Peperomia mexicana,** Miq. Syst. Pip. p. 75; DC. Prodr. xvi. 1, p. 394.
Tildenia mexicana, Miq. in Diar. Inst. Reg. Nederl. 1842.
Piper parvulum, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 20).
South Mexico, valley of Cordova (*Bourgeau*, 1989), Jalapa at 3000 feet (*Galeotti*, 7111); Guatemala, Volcan de Fuego 6000 feet (*Salvin*). Hb. Kew.

51. **Peperomia microphylla,** H. B. K. Nov. Gen. et Sp. i. p. 69, t. 15; DC. Prodr. xvi. 1, p. 465 ?
South Mexico, Vera Cruz to Orizaba (*Müller*, 1328). Hb. Kew.
Typical *P. microphylla* is from the Andes of Quito.

52. **Peperomia miradoresiana,** C. DC. in DC. Prodr. xvi. 1, p. 395.
South Mexico, Mirador (*Linden*, 126).

53. **Peperomia mülleri,** C. DC. in Linnæa, xxxvii. p. 366.
South Mexico, Orizaba (*Müller*).

54. **Peperomia muscophila,** C. DC. in DC. Prodr. xvi. 1, p. 395.
New Spain (Hb. *Pavon*).

55. **Peperomia naranjoana,** C. DC. in Linnæa, xxxvii. p. 378.
Costa Rica, Naranjo at 5000 feet (*Œrsted*).

56. **Peperomia nummularifolia,** H. B. K. Nov. Gen. et Sp. i. p. 66; DC. Prodr. xvi. 1, p. 420 (varietates).
Acrocarpidium nummularifolium, Miq. Syst. Pip. p. 52.
South Mexico, near Jalapa (*Schiede & Deppe*); Panama (*Seemann*)?—Colombia to Peru and in the West Indies. Hb. Kew.
Respecting the synonymy of this species, see note under *Peperomia cyclophylla,* Miq.

57. **Peperomia œrstedii,** C. DC. in Linnæa, xxxvii. p. 375.
Costa Rica, Volcan de Irazu at 8000 feet (*Œrsted*).

58. **Peperomia olivacea,** C. DC. in Seem. Journ. Bot. 1866, et in DC. Prodr. xvi. 1, p. 464.
Costa Rica (*Hoffmann*).

59. **Peperomia ovato-peltata,** C. DC. in Seem. Journ. Bot. 1866, p. 132, et in DC. Prodr. xvi. 1, p. 394.
Costa Rica (*Hoffmann*).

60. **Peperomia oxycarpa,** C. DC. in Linnæa, xxxvii. p. 377.
South Mexico, Chinantla (*Liebmann*).

61. **Peperomia pallescens,** Miq. in Hook. Lond. Journ. Bot. vi. p. 460; DC. Prodr. xvi. 1, p. 426.
Guatemala.

62. **Peperomia papantlensis,** C. DC. in Linnæa, xxxvii. p. 366.
South Mexico, Papantla (*Liebmann*).

63. **Peperomia pellucida,** H. B. K. Nov. Gen. et Sp. i. p. 64; DC. Prodr. xvi. 1, p. 402.
Piper pellucidum, Linn. Sp. Pl. p. 42.
Micropiper pellucidum, Miq. Comm. Phytogr. p. 54.
Guatemala, Mazatenango (*Bernoulli*, 58); Panama, Chagres (*Fendler*, 302), without locality (*S. Hayes*, 195; *Seemann*, 113).—Southward to Peru and Brazil, and in the West Indies; also in Tropical Africa. Hb. Kew.

64. **Peperomia perforata,** Opiz in Presl's Reliq. Hænk. i. p. 162, t. 30. fig. 2; DC. Prodr. xvi. 1, p. 438.
Mexico (*Hænke*).

65. **Peperomia petiolaris,** C. DC. in Seem. Journ. Bot. 1866, p. 138, et in DC. Prodr. xvi. 1, p. 414.
Costa Rica (*Hoffmann*).—Cuba.

66. **Peperomia petrophila,** C. DC. in Linnæa, xxxvii. p. 369.
South Mexico, Mirador (*Liebmann*, 100). Hb. Kew.

67. **Peperomia plicata,** Opiz in Presl's Reliq. Hænk. p. 163; DC. Prodr. xvi. 1, p. 466.
South Mexico, Acapulco (*Hænke*).

68. **Peperomia portobellensis,** Beurling in Kong. Vet.-Akad. Handl. 1854, p. 147; DC. Prodr. xvi. 1, p. 440.
Panama, Portobello (*Billberg*).

69. **Peperomia producta,** Griseb. Fl. Brit. W. Ind. p. 166; DC. Prodr. xvi. 1, p. 430.
Nicaragua (*Tate*, 559).—Cuba; Jamaica. Hb. Kew.

70. **Peperomia pseudoamplexicaulis,** C. DC. in DC. Prodr. xvi. 1, p. 432.
New Spain (Hb. *Pavon*).—Cuba.

71. **Peperomia quadrifolia,** H. B. K. Nov. Gen. et Sp. i. p. 69; DC. Prodr. xvi. 1, p. 454; Griseb. Fl. Brit. W. Ind. p. 166; Hook. Exot. Fl. t. 22.
Piper affine, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 9), non Dietr.
South Mexico, Vera Cruz to Orizaba (*Müller*, 103; *Bourgeau*, 2963), Mirador at 3000 feet (*Galeotti*, 6000).—Venezuela to Peru and in the West Indies. Hb. Kew.

72. **Peperomia quaternata,** Miq. in Seem. Bot. Voy. 'Herald,' p. 197; DC. Prodr. xvi. 1, p. 450.
Panama, Boquete, Veraguas (*Seemann*, 1571). Hb. Kew.

73. **Peperomia reflexa,** A. Dietr. Sp. Pl. i. p. 180; DC. Prodr. xvi. 1, p. 45 (varietates); Miq. Syst. Pip. p. 169; Wight, Ic. Pl. Ind. Or. t. 1923.
Piper reflexum, Linn. f. Suppl. p. 91.
Common in most Tropical Countries, including Mexico, and Central America. Hb. Kew.

74. **Peperomia rubella,** Hook. Exot. Fl. t. 58; DC. Prodr. xvi. 1, p. 461.
South Mexico, Vera Cruz to Orizaba (*Müller*, 101)? Hb. Kew.
The Mexican plant seems to be different from the one figured.

75. **Peperomia rubioides,** H. B. K. Nov. Gen. et Sp. i. p. 70; DC. Prodr. xvi. 1, p. 452; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, 19).
South Mexico, Jilotepec near Jalapa, 3000 to 4000 feet (*Galeotti*, 6005).—Venezuela to Brazil and Peru.

76. **Peperomia rubrinodis,** Kth. et Bouché in Ind. Sem. Hort. Berol. 1848, p. 12; DC. Prodr. xvi. 1, p. 445.
Guatemala (*Warscewicz*).

77. **Peperomia rupestris,** H. B. K. Nov. Gen. et Sp. i. p. 62; DC. Prodr. xvi. 1, p. 431; Miq. in Linnæa, xviii. p. 713.

South Mexico, Misantla, Jalapa (*Schiede*).—Venezuela; Guiana; Brazil.

78. **Peperomia sanjoseana,** C. DC. in Linnæa, xxxvii. p. 372.

Costa Rica, San José, 4000 feet (*Ærsted*).

79. **Peperomia scandens,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 32, t. 51. fig. *b*; DC. Prodr. xvi. 1, p. 434.

Piper scandens, Vahl, Enum. i. p. 346.
Peperomia pulicaris, Opiz in Presl's Reliq. Hænk. i. p. 162, t. 30. fig. 1.
Acrocarpidium pulicare, Miq. Syst. Pip. p. 57.
Acrocarpidium repens, Miq. loc. cit. et Ill. Pip. t. 3. fig. *b.*

Nicaragua, Chontales (*Seemann*, 154; *Tate*, 203).—Colombia to Peru and Brazil, and in the West Indies. Hb. Kew.

80. **Peperomia seemanniana,** Miq. in Seem. Bot. Voy. 'Herald,' p. 198, t. 37; DC. Prodr. xvi. 1, p. 441.

Panama, Volcan de Chiriqui, Veraguas (*Seemann*).

81. **Peperomia tenerrima,** Schl. et Cham. in Linnæa, vi. p. 353; DC. Prodr. xvi. 1, p. 456; Miq. Ill. Pip. t. 21.

Peperomia schiedeana, Schl. in Linnæa, vii. p. 138.

South Mexico, Cuesta Grande de Jalacingo (*Schiede & Deppe*).

82. **Peperomia tenuiflora,** Opiz in Presl's Reliq. Hænk. i. p. 164; DC. Prodr. xvi. 1. p. 403.

Mexico (*Hænke*).

83. **Peperomia tenuifolia,** C. DC. in Linnæa, xxxvii. p. 371.

Costa Rica, Aguacate (*Ærsted*).

84. **Peperomia tlapacoyoensis,** C. DC. in Linnæa, xxxvii. p. 376.

South Mexico, Santa Maria, Tlapacoya (*Liebmann*).

85. **Peperomia tuberosa,** Opiz in Presl's Reliq. Hænk. i. p. 164; DC. Prodr. xvi. 1, p. 401.

Mexico (*Hænke*).

86. **Peperomia turialvensis,** C. DC. in Linnæa, xxxvii. p. 380.

Costa Rica, Volcan de Turrialba, at 3000 feet (*Ærsted*).

87. **Peperomia umbilicata,** Ruiz et Pav. Fl. Peruv. et Chil. i. p. 30, t. 45. fig. *b*; DC. Prodr. xvi. 1, p. 393 (varietates); H. B. K. Nov. Gen. et Sp. i. p. 72, t. 15. fig. 1.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 802);

South Mexico, Real del Monte and Zimapan (*Coulter*, 1398, 1399), Pedregal and Santa Fé, valley of Mexico (*Bourgeau*, 418, 631), Vera Cruz to Orizaba (*Müller*, 1063).—Colombia to Bolivia. Hb. Kew.

Order CXVII. CHLORANTHACEÆ.

Chloranthaceæ, Benth. et Hook. Gen. Plant. iii. p. 133.

Herbs, shrubs, or trees. Three genera comprising about twenty-five species, which inhabit Tropical America, Tropical and Eastern Asia, the Pacific Islands, and New Zealand.

1. HEDYOSMUM.

Hedyosmum, Sw. Prodr. Fl. Ind. Occ. p. 84, et Fl. Ind. Occ. p. 957, t. 18; Benth. et Hook. Gen. Plant. iii. p. 133.

An exclusively Tropical-American genus of trees and tall shrubs. Twenty-three species are enumerated; but Bentham and Hooker estimate that they should be reduced to about sixteen.

1. **Hedyosmum artocarpus,** Solms-Laub. in DC. Prodr. xvi. 1, p. 485.

South Mexico, Jalapa (*Hahn*), Orizaba (*Botteri*, 828). Hb. Kew.

2. **Hedyosmum calloso-serratum,** Œrst. in Naturh. Foren. Vidensk. Meddel. 1856 (reprint, p. 11); DC. Prodr. xvi. 1, p. 482.

Costa Rica, Volcan de Irazu at 9000 feet (*Œrsted*).

3. **Hedyosmum mexicanum,** Cordem. in Adansonia, iii. p. 307; DC. Prodr. xvi. 1, p. 485.

South Mexico, Vera Cruz at 3000 feet (*Galeotti*).

Order CXVIII. MYRISTICACEÆ.

Myristicaceæ, Benth. et Hook. Gen. Plant. iii. p. 135.

Limited to a single genus of about eighty arboreous species, the greater part inhabiting Tropical Asia and America; very few are native of Tropical Africa, one of Madagascar, and one of Australia.

1. MYRISTICA.

Myristica, Linn. Gen. Plant. ed. 2; Benth. et Hook. Gen. Plant. iii. p. 136.

1. **Myristica guatemalensis,** Hemsley, n. sp. (Tab. LXXIV. figg. 5 et 6.)

Cito glabrescens, foliis lanceolato-oblongis, nervis utrinque usque ad 30, semine oblongo pollicari, strato testæ externo crustaceo nitido.

Arbor?, ramulis teretibus, primum tenuiter puberulis, deinde glaberrimis, nitidis. *Folia* breviter petiolata (petiolus 2–3 lineas longus), subcoriacea, minute pellucido-punctata, utrinque cito glabrescentia, lanceolato-oblonga, 4–9-pollicaria, subacuminata, obtusissima, basi cuneata, subtus pallidiora, nervis utrinque 15–30. *Semen* oblongum, pollicare; arillus tenuis?; stratum testæ externum nitidum, crustaceum; chalaza lateralis prominens.

GUATEMALA (*Skinner*). Hb. Kew.

We have ventured to describe and figure this imperfect material, because, as far as it goes, it is very distinct. The seed, as well as the foliage, is very different from *M. sebifera*.

EXPLANATION OF TAB. LXXIV. FIGG. 5 et 6.

Fig. 5, seed divested of the aril and outer testa, showing the large chalazal scar; 6, the same, showing the hilum.

2. **Myristica mexicana,** Hemsley, n. sp. (Tab. LXXIII.)

Glaberrima, foliis oblongis obovato-oblongisve nervis utrinque 6–8, floribus ♂ subracemosis, perianthio glabro, staminibus 6 brevissime stipitatis, antheris muticis.

Frutex omnino glaberrimus, ramulis teretibus, graciliusculis petiolisque ferrugineis. *Folia* breviter petiolata, subcoriacea, minute pellucido-punctata, oblonga vel obovato-oblonga, 5–8-pollicaria, subacuminata, obtusa, basi cuneata, nervis lateralibus primariis utrinque 6–8 supra subobsoletis, subtus elevatis, venis tenuissimis, reticulatis. *Flores* (♂ tantum vidi) fasciculatim subracemosi; pseudo-racemi axillares vel supraaxillares, 2–3-pollicares; pedicelli 1–2 lineas longi; perianthium glabrum, oblongum, lineam longum, trifidum; stamina 6, brevissime stipitata, antheris muticis.

SOUTH MEXICO, banks of the river Puyapatengo, Tabasco (*Linden*, 1612). Hb. Kew.

Although we have seen only male flowers, we have not hesitated to found a new species, as it is so very distinct in its inflorescence, and in all its parts being perfectly hairless.

EXPLANATION OF TAB. LXXIII.

A branch bearing leaves and male flowers, natural size. Fig. 1, a flower; 2, the same with perianth laid open, showing the staminal column: both enlarged.

3. **Myristica panamensis,** Hemsley, n. sp. (Tab. LXXIV.)

Foliis subcoriaceis opacis ovato-oblongis basi rotundatis, paniculis parvis supraaxillaribus, floribus ♂ minimis sessilibus intus glabris, staminibus 6 breviter stipitatis, antheris muticis, fructu subgloboso circiter 1 poll. diametro, arillo carnoso lacerato, testæ strato externo tenui.

Arbor formosa, 50–100-pedalis et ultra (fide Hayesii Seemannii), novellis ferrugineo-tomentosis. *Folia* subcoriacea, breviter petiolata, ovato-oblonga vel interdum fere lanceolata, 6–9-pollicaria, acuminata, acuta, basi rotundata, infra plus minusve ferrugineo-tomentosa, supra glabra, opaca, nervis utrinque 12–15, petiolo leviter incrassato. *Flores* (♂ tantum vidi) minimi, sessiles, in paniculas $1\frac{1}{2}$–2 poll. longas supraaxillares congesti, ebracteati; perianthium subglobosum, 3–4-lobatum, extus ferrugineo-tomentosum, intus glabrum; stamina 3–6, antheris muticis, breviter stipitatis. *Fructus* subglobosus, bivalvis, circiter 1 poll. diametro; semen arillo aurantiaco carnoso lacerato involutum, testæ strato externo tenui lineolato.—*M. sebifera*, Seem. Bot. Voy. 'Herald,' p. 75, non Sw.

PANAMA, shady forests near Cruces (*Seemann*, 545), Lion Hill station (*S. Hayes*, 618). Hb. Kew.

Allied to *M. sebifera*, Sw., and *M. cuspidata*, Spruce, differing from the former in the texture and base of its leaves, smaller male flowers in smaller panicles, and in its larger fruit; from the latter in its opaque, dotless leaves, denser panicles of smaller male flowers, and smaller stamens.

EXPLANATION OF TAB. LXXIV.

Fig. 1, a flower having a 4-lobed perianth; 2, a flower having a 3-lobed perianth; 3, the same laid open: all enlarged. 4, a seed, natural size.

Order CXIX. MONIMIACEÆ.

Monimiaceæ, Benth. et Hook. Gen. Plant. iii. p. 137.

Trees or shrubs, some of them of climbing habit. About 150 species are known, and they inhabit the warmer parts of America and Asia, the Mascarene Islands, Australia, and the South Pacific Islands; and a genus of two species has recently been discovered in western Tropical Africa.

1. MOLLINEDIA.

Mollinedia, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 83, t. 15; Benth. et Hook. Gen. Plant. iii. p. 140.

A genus of about thirty arboreous and shrubby species, whereof three (or four?) are Australian, and the rest inhabit America, ranging from Mexico to Brazil.

1. **Mollinedia laurina,** Tul. in Ann. Sc. Nat. série 4, iii. p. 43; DC. Prodr. xvi. 2, p. 664?

PANAMA, Lion Hill station (*S. Hayes*). Hb. Kew.

2. **Mollinedia nigrescens,** Tul. in Ann. Sc. Nat. série 4, iii. p. 41, et Monogr. p. 388; DC. Prodr. xvi. 2, p. 663.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*).

3. **Mollinedia viridiflora,** Tul. in Ann. Sc. Nat. série 4, iii. p. 43; DC. Prodr. xvi. 2, p. 664.

SOUTH MEXICO, Oaxaca (*Galeotti*, 7172), Orizaba (*Botteri*, 918). Hb. Kew.

β. **glabra,** A. DC. in DC. Prodr. xvi. 2, p. 664.

SOUTH MEXICO, Orizaba (*Botteri*, 979). Hb. Kew.

2. SIPARUNA.

Siparuna, Aubl. Pl. Guian. p. 864, t. 333; Benth. et Hook. Gen. Plant. iii. p. 144.
Citrosma, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 134, t. 29.

An exclusively Tropical-American genus of about sixty species of shrubs and small trees.

1. **Siparuna andina,** A. DC. in DC. Prodr. xvi. 2, p. 648.

Citrosma andina, Tul. in Ann. Sc. Nat. série 4, iii. p. 36, et Monogr. p. 338.

SOUTH MEXICO, Cordillera of Oaxaca at 3000 feet (*Galeotti*, 7184).

2. **Siparuna cauliflora,** Hemsley, n. sp. (Tab. LXXV.)

Stellato-pubescens, foliis amplis obovatis vel ellipticis, cymis in ramis vetustis subsessilibus, perianthio carnoso intus glabro fere clauso, ♂ subgloboso, ♀ turbinato, staminibus indefinitis, carpellis 20–30.

Frutex 5–15-pedalis, ramis crassiusculis, subtetragonis, foliisque dense stellato-pubescentibus, ferrugineis vel incanis. *Folia* subopposita, petiolata, membranacea, crassiuscula, obovata vel elliptica, 6–12 poll. longa, 3–5 poll. lata, breviter acuminata, acuta, basi cuneata vel truncata, calloso-serrulata, undulata, vel interdum subduplicato-serrulata, primum mollia, demum scabrida, venis primariis lateralibus contiguis, prominentibus; petiolus usque ad sesquipollicaris. *Flores* dioici (fide Hayesii), dense cymosi, pubescentes; cymæ subsessiles, sæpissime multifloræ et in caule ramisque vetustis productæ, interdum in ramis junioribus paucifloræ; pedicelli 2–6 lineas longi; perianthium carnosum, intus glabrum, apice fere clausum, vix lobatum, ♂ subglobosum, ♀ turbinatum; stamina indefinita (circiter 20), brevissime exserta, filamentis late dilatatis; carpella 20–30, stylis exsertis. *Fructus* maturus non visus.

PANAMA, Chagres (*Fendler*, 196), common at Gatun (*S. Hayes*). Hb. Kew.

A very distinct species in its ample foliage and nearly sessile clusters of flowers usually on the older leafless branches and stems.

EXPLANATION OF TAB. LXXV.

Fig. 1, 2, and 3, female flowers; 4, cross section of a female flower; 5, a male flower: all enlarged.

3. **Siparuna guianensis,** Aubl. Guian. ii. p. 865, t. 333; DC. Prodr. xvi. 2, p. 654 (varietates).

PANAMA Chagres (*Fendler*, 188).—COLOMBIA to GUIANA, BRAZIL, and TRINIDAD. Hb. Kew.

4. **Siparuna nicaraguensis,** Hemsley, n. sp.

Cito glabrescens, foliis subcoriaceis obovato-oblongis ellipticisve, cymis axillaribus paucifloris, periantho ♂ subcarnoso ore et limbo breviter 5–6-lobato, staminibus 6–9, filamentis dilatatis.

Frutex ramis teretibus, graciliusculis, foliisque primum sparsim stellato-pilosulis, cito glabrescentibus. *Folia* subcoriacea, longiuscule petiolata, obovato-oblonga vel elliptica, 4–6-pollicaria, remote obsoleteque denticulata, leviter undulata, acuminata, acuta, basi obtusa vel rotundata, supra nitida, nigra (in siccis), subtus pallidiora, venis inconspicuis; petiolus graciliusculus, 4–12 lineas longus. *Flores* (♂ tantum vidi) cito glabrescentes, cymosi; cymæ axillares, pauciforæ, breviter pedunculatæ, petiolis breviores vel æquales; pedicelli graciles; perianthium subcarnosum, subturbinatum, limbo dilatato obsolete 5–6-lobato, ore aperto, 5–6-lobato; stamina 6–9, exserta, filamentis omnino dilatatis.

NICARAGUA, Chontales (*Tate*, 385, 386, 421). Hb. Kew.

In foliage this species is almost exactly like *S. panamensis*, C. DC.; but the flowers are almost or quite glabrous, and contain less than twelve stamens.

5. **Siparuna panamensis,** A. DC. in Seem. Journ. Bot. 1865, p. 219; DC. Prodr. xvi. 2, p. 648.

PANAMA, around the city of Panama (*S. Hayes*, 671). Hb. Kew.

6. **Siparuna pauciflora,** A. DC. in DC. Prodr. xvi. 2, p. 656.

Citrosma pauciflora, Beurling in Kongl. Vetens. Akad. Handl. 1854, p. 44.

PANAMA, Portobello (*Billberg*).

7. **Siparuna riparia,** A. DC. in DC. Prodr. xvi. 2, p. 647.

Citrosma riparia, Tul. in Ann. Sc. Nat. série 4, iii. p. 36.

SOUTH MEXICO, Cordillera of Vera Cruz, 2000 to 4000 feet (*Galeotti*, 269), valley of Cordova (*Bourgeau*, 1748), Jalapa (*Linden*, 2), region of Orizaba (*Botteri*, 904; *Bilimek*, 279). Hb. Kew.

β. **sumichrastii,** A. DC. in DC. Prodr. xvi. 2, p. 648.

SOUTH MEXICO, Orizaba (*Sumichrast*, 974).

Series V. DAPHNALES.

Order CXX. LAURINEÆ.

Laurineæ, Benth. et Hook. Gen. Plant. iii. p. 146.

Trees or shrubs, except *Cassytha.*

About 900 species, referred to thirty-four genera. They mostly inhabit the warmer parts of America, Asia, Australia, and the Pacific Islands; a few occur in extratropical North and South America, the Mediterranean region, Canary Islands, South Africa, and New Zealand. The order is barely represented in Tropical Africa; and the greatest concentration of species is in eastern tropical South America.

1. BEILSCHMIEDIA.

Beilschmiedia, Nees in Wall. Pl. As. Rar. ii. p. 69, et Syst. Laur. p. 197; Benth. et Hook. Gen. Plant. iii. p. 152.

About twenty species inhabiting Africa, Tropical Asia, Australia, New Zealand, and Tropical America.

1. **Beilschmiedia pendula,** Hemsley.

Hufelandia pendula, Nees, Syst. Laurin. p. 188; DC. Prodr. xv. 1, p. 65 (excl. syn. *H. thomæa,* Nees).

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1460).—WEST INDIES. Hb. Kew.

2. MISANTECA.

Misanteca, Cham. et Schl. in Linnæa, vi. p. 367; Benth. et Hook. Gen. Plant. iii. p. 155.

Four species—the typical one Mexican, one Cuban, and two Brazilian.

1. **Misanteca capitata,** Cham. et Schl. in Linnæa, vi. p. 367; DC. Prodr. xv. 1, p. 96.

South Mexico, Misantla and Papantla (*Schiede & Deppe*), Wartenberg near Tantoyuca (*Ervendberg*). Hb. Kew.

3. PERSEA.

Persea, Gærtn. f. Fruct. iii. p. 222, t. 221; Benth. et Hook. Gen. Plant. iii. p. 156.

About 100 species are enumerated; many of these, however, were founded on very imperfect material. They inhabit tropical and subtropical Asia and America, from Chili to Virginia, with one in the Canary Islands.

1. **Persea amplexicaulis,** Cham. et Schl. in Linnæa, v. p. 90; DC. Prodr. xv. 1, p. 54.

South Mexico, Cerro Colorado (*Schiede & Deppe*).

2. **Persea cinnamomifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 160.

Phœbe granatensis β. *? ærstedii,* Meissn. in DC. Prodr. xv. 1, p. 32.

Costa Rica, Volcan de Barba (*Ærsted*).

The type is found in Venezuela and Colombia.

3. **Persea effusa,** Hemsley.

Phœbe effusa, Meissn. in DC. Prodr. xv. 1, p. 33.

South Mexico, around Vera Cruz and Jalapa (*Linden*, 13, 78), Cordillera of Vera Cruz, 3000 feet (*Galeotti*, 7009). Hb. Kew.

β. **areolata,** Meissn. loc. cit.

South Mexico, around Jalapa (*Linden*, 19).

γ. **parvifolia,** Meissn. loc. cit.

South Mexico, Orizaba (*Botteri*, 1039, 1044). Hb. Kew.

4. **Persea drimyfolia,** Cham. et Schl. in Linnæa, vi. p. 365; DC. Prodr. xv. 1, p. 53.

South Mexico, Papantla (*Schiede & Deppe*).

5. **Persea gratissima,** Gærtn. f. Fruct. iii. p. 222; DC. Prodr. xv. 1, p. 52.

α. **vulgaris,** Meissn. in DC. Prodr. xv. 1, p. 53.

Mexico (*Botteri*, 948; *Aschenborn*); Central America (*Ærsted*). Hb. Kew.

β. **oblonga,** Meissn. loc. cit.; Bot. Mag. t. 4580.

Mexico (*Galeotti*, 7010). Hb. Kew.

δ. **schiedeana,** Meissn. loc. cit.; Nees, Syst. Laur. p. 130 (species).

Mexico, Misantla (*Schiede & Deppe*).

This is the Avocado-pear or Alligator-pear, and is very generally dispersed in

Tropical America, both in a wild and cultivated condition; it is also cultivated in other countries.

6. **Persea hartwegii,** Hemsley.

Phœbe hartwegii, Meissn. in DC. Prodr. xv. 1, p. 30.
Oreodaphne benthamiana, Nees in Linnæa, xxi. p. 521.

South Mexico, Guanajuato (*Hartweg*, 84). Hb. Kew.

[*Phœbe insularis*, Meissn. in DC. Prodr. xv. 1, p. 33, is more likely to be from Cocos Island, off the west coast of South America, than from the Indian Ocean.]

7. **Persea lævigata,** H. B. K. Nov. Gen. et Sp. ii. p. 157; DC. Prodr. xv. 1, p. 49.

Venezuela; Colombia.

β. **cærulea,** Meissn. in DC. Prodr. xv. 1, p. 49.

Central America (*Œrsted*).—Venezuela; Colombia.

8. **Persea? longipes,** Meissn. in DC. Prodr. xv. 1, p. 55.

Laurus longipes, Schl. in Linnæa, vii. p. 390.

South Mexico, Hacienda de la Laguna (*Schiede*).

9. **Persea mexicana,** Hemsley.

Phœbe mexicana, Meissn. in DC. Prodr. xv. 1, p. 31.

South Mexico, Jalapa, 3000 feet (*Galeotti*, 7026), region of Orizaba (*Bourgeau*, 1436), Vera Cruz (*Linden*). Hb. Kew.

10. **Persea? orizabæ,** Mart. et Gal. in Bull. Acad. Brux. x. 1, p. 358; DC. Prodr. xv. 1, p. 56.

South Mexico, oak-forests on the peak of Orizaba at 7500 to 10,500 feet (*Galeotti*, 252).

11. **Persea pachypoda,** Nees in Linnæa, xxi. p. 490; DC. Prodr. xv. 1, p. 55.

Mexico, near El Bruco (*Ehrenberg*).

12. **Persea? salicifolia,** Hemsley.

Phœbe salicifolia, Nees in Linnæa, xxi. p. 488; DC. Prodr. xv. 1, p. 30.

South Mexico, near Regla (*Ehrenberg*).

13. **Persea veraguensis,** Seem. Bot. Voy. 'Herald,' p. 193; DC. Prodr. xv. 1, p. 51.

Panama, Volcan de Chiriqui, Veraguas (*Seemann*, 1578). Hb. Kew.

4. OCOTEA.

Ocotea, Aubl. Pl. Guian. ii. p. 780, t. 310, char. emend. in Juss. Gen. Plant. p. 80; Benth. et Hook. Gen. Plant. iii. p. 157.

A genus of nearly 200 species, for the greater part inhabiting Tropical and Sub-

tropical America; a few occur in the Canary Islands, South Africa, and the Mascarene Islands.

1. **Ocotea effusa,** Hemsley.

Oreodaphne effusa, Meissn. in DC. Prodr. xv. 1, p. 120.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen,* 906), Vera Cruz (*Linden,* 17), Jalapa 4000 feet (*Galeotti,* 7061). Hb. Kew.

2. **Ocotea helicterifolia,** Hemsley.

Oreodaphne helicterifolia, Meissn. in DC. Prodr. xv. 1, p. 123.

South Mexico, San Bartolo, Chiapas (*Linden,* 1641). Hb. Kew.

3. **Ocotea klotzschiana,** Hemsley.

Oreodaphne klotzschiana, Nees in Linnæa, xxi. p. 523; DC. Prodr. xv. 1, p. 128.

Oreodaphne psychotrioides, Benth. Pl. Hartw. p. 50, non Nees.

South Mexico, region of Orizaba (*Bourgeau,* 2517), Banco (*Hartweg*). Hb. Kew.

4. **Ocotea mexicana,** Hemsley.

Oreodaphne mexicana, Meissn. in DC. Prodr. xv. 1, p. 118.

α. **subsessilis,** Meissn. loc. cit.

South Mexico, Cordillera of Oaxaca, 3000 feet (*Galeotti,* 7004), Sierra San Pedro Nolasco &c. (*Jurgensen,* 937). Hb. Kew.

β. **? longipes,** Meissn. loc. cit.

South Mexico, around Orizaba (*Botteri,* 1018). Hb. Kew.

γ. **diminuta,** Meissn. loc. cit.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen,* 575). Hb. Kew.

5. **Ocotea mucosa,** Hemsley.

Oreodaphne mucosa, Nees, Syst. Laur. p. 401; DC. Prodr. xv. 1, p. 133.

New Spain (hb. *Pavon*).

6. **Ocotea psychotrioides,** H. B. K. Nov. Gen. et Sp. ii. p. 162.

Oreodaphne psychotrioides, Nees, Syst. Laur. p. 452; DC. Prodr. xv. 1, p. 124 (varietates).

South Mexico, region of Orizaba (*Botteri,* 1040, 1041, 1042, 1043, 1050; *Sumichrast,* 940), Jalapa (*Linden,* 7023, 7047; *Humboldt & Bonpland*), Cuesta de Naulingo (*Schiede*). Hb. Kew.

7. **Ocotea sieberi,** Hemsley.

Oreodaphne sieberi, Meissn. in DC. Prodr. xv. 1, p. 137.

South Mexico, Teapa, Tabasco (*Linden,* 1607; *Johnson,* 127); Panama, Lion Hill (*S. Hayes,* 384)?—West Indies; Brazil. Hb. Kew.

8. **Ocotea subtriplinervia,** Hemsley.

Oreodaphne subtriplinervia, Meissn. in DC. Prodr. xv. 1, p. 125.

South Mexico, near Jalapa, Vera Cruz (*Linden*, 17 ; *Galeotti*, 7061).

9. **Ocotea tampicensis,** Hemsley.

Oreodaphne tampicensis, Meissn. in DC. Prodr. xv. 1, p. 136.

South Mexico, Tampico (*Berlandier*).

10. **Ocotea umbrosa,** Mart., ex Meissn. in DC. Prodr. xv. 1, p. 122.

Oreodaphne umbrosa, Meissn. loc. cit.

Brazil.

β. **? bullata,** Meissn. loc. cit.

Central America (*Œrsted*).

5. NECTANDRA.

Nectandra, Roland. in Rottb. Descr. Pl. Surin. p. 10; Benth. et Hook. Gen. Plant. iii. p. 159.

An exclusively American genus of about seventy species, ranging from Mexico and the West Indies to Peru and Brazil.

1. **Nectandra amazonum,** Nees, Syst. Laur. p. 282 ; DC. Prodr. xv. 1, p. 150 (varietates).

Panama, Frijoli station (*S. Hayes*, 487), woods near the city of Panama (*Seemann*, 556).—Southward to Peru and Brazil. Hb. Kew.

2. **Nectandra cuspidata,** Nees, Syst. Laur. p. 330 ; DC. Prodr. xv. 1, p. 159.

Panama (*Seemann*, 292 ; *S. Hayes*, 392).—Southward to Brazil and in the West Indies.—Hb. Kew.

3. **Nectandra glabrescens,** Benth. Bot. Voy. 'Sulphur,' p. 161 ; DC. Prodr. xv. 1, p. 165.

Ocotea salicifolia, Hook. et Arn. Bot. Beech. Voy. p. 309, vix H. B. K., ex Benth.

South Mexico, San Blas to Acapulco (*Hinds*), San Blas to Tepic (*Sinclair*). Hb. Kew.

4. **Nectandra laurel,** Kl. ; DC. Prodr. xv. 1, p. 146 ?

Panama, Lion Hill (*S. Hayes*, 467). Hb. Kew.

Colombia to Peru is the range of *N. laurel* as defined above.

5. **Nectandra limbata,** Nees in Linnæa, xxi. p. 509 ; DC. Prodr. xv. 1, p. 156.

Mexico (*Jurgensen*).—Peru.

6. **Nectandra mollis,** Nees, Syst. Laur. p. 287 ; Linnæa, xxi. p. 504.

α. **attenuata,** Meissn. in DC. Prodr. xv. 1, p. 148.

Ocotea mollis, H. B. K. Nov. Gen. et Sp. p. 164.

Colombia.

β. **villosa,** Meissn. loc. cit.

Ocotea mollis, Cham. et Schl. in Linnæa, vi. p. 366.

South Mexico, Misantla (*Schiede & Deppe*), Sierra San Pedro Nolasco (*Jurgensen*, 972); Costa Rica (*Endres*).—Colombia to Peru.

γ. **venosa,** Nees, Syst. Laur. p. 201; DC. Prodr. xv. 1, p. 149.

Mexico (*Schiede & Deppe*); Central America (*Œrsted*).

δ. **intermedia,** Meissn. in DC. Prodr. xv. 1, p. 149.

Mexico.—Colombia; Peru.

7. **Nectandra pallida,** Nees in Linnæa, xxi. p. 510; DC. Prodr. xv. 1, p. 157.

Mexico (*Karwinski*).—Guiana.

8. **Nectandra polita,** Nees, β. **? œrstedii,** Meissn. in DC. Prodr. xv. 1, p. 164.

Nicaragua (*Œrsted*).

9. **Nectandra sanguinea,** Rottb. in Act. Hafn. 1778, p. 279, et Pl. Surin. p. 10; DC. Prodr. xv. 1, p. 164.

South Mexico, Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 7006), Orizaba (*Botteri*, 986).—Colombia to Guiana, and in the West Indies. Hb. Kew.

β. **lanceolata,** Meissn. in DC. Prodr, xv. 1, p. 164.

Ocotea salicifolia, H. B. K. Nov. Gen. et Sp. ii. p. 166.

South Mexico, Cordillera of Vera Cruz, at 3000 feet (*Galeotti*, 7120), Acapulco (*Humboldt & Bonpland*). Hb. Kew.

10. **Nectandra striata,** Nees, Syst. Laur. p. 309; DC. Prodr. xv. 1, p. 166.

Ocoteæ sp., Cham. et Schl. in Linnæa, vi. p. 366. n. 1146.

South Mexico, Chiconquiaco (*Schiede & Deppe*).

11. **Nectandra turbacensis,** Nees, γ. **mexicana,** Meissn. in DC. Prodr. xvi. p. 152.

South Mexico, banks of the Antigua, Vera Cruz (*Galeotti*, 7101), Vera Cruz (*Linden*, 16). Hb. Kew.

12. **Nectandra willdenowiana,** Nees, Syst. Laur. p. 290; DC. Prodr. xv. 1, p. 165.

Carolina to Florida.—Panama, Chagres (*Fendler*, 54).—Common in the West Indies. Hb. Kew.

6. SASSAFRIDIUM.

Sassafridium, Meissn. in DC. Prodr. xv. 1, p. 171; Benth. et Hook. Gen. Plant. iii. p. 160.

Besides the following, Bentham and Hooker refer two Brazilian trees to this genus.

1. **Sassafridium veraguense,** Meissn. in DC. Prodr. xv. 1, p. 171.

Costa Rica (*Warscewicz*); Panama, Veraguas (*Bridges*). Hb. Kew.

7. LITSEA.

Litsea, Lam. Dict. iii. p. 574; Benth. et Hook. Gen. Plant. iii. p. 161.
Tetranthera, Jacq. Hort. Schœnb. i. p. 59, t. 113.

This genus comprises upwards of 140 species, inhabiting Tropical and Eastern Asia, from the Malayan Archipelago to Japan, Tropical and Subtropical Australia, New Zealand, and New Caledonia, and a few North America.

1. **Litsea glaucescens,** H. B. K. Nov. Gen. et Sp. ii. p. 168.
Litsea cervantesii, H. B. K. loc. cit.
Tetranthera glaucescens, Spreng. Syst. Veg. ii. p. 267; DC. Prodr. xv. 1, p. 193.
Tetranthera cervantesii, Nees, Syst. Laur. p. 553.

α. **subsolitaria,** Meissn. in DC. Prodr. xv. 1, p. 193.

South Mexico, region of Orizaba, up to 9750 feet (*Linden*, 1070; *Botteri*, 996; *Bilimek*, 359), Real del Monte 8000 feet (*Galeotti*, 254), Vittoria to Tula (*Berlandier*), Zimapan (*Coulter*, 88), Sierra San Pedro Nolasco &c. (*Jurgensen*, 423), Las Vigas, 7000 to 8000 feet (*Linden*, 1071). Hb. Kew.

β. **subcorymbosa,** Meissn. loc. cit.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 798); South Mexico, region of Orizaba (*Botteri*, 945). Hb. Kew.

γ. **racemosa,** Meissn. loc. cit.

South Mexico, around Oaxaca (*Cuming*, ex *Meissner*).

δ. **major,** Meissn. loc. cit.

South Mexico, Vera Cruz (*Linden*, 1072); Guatemala, San Juan Jocotepec (*Hartweg*, 613), Volcan de Atitlan 9000 feet (*Salvin*). Hb. Kew.

2. **Litsea neesiana,** Hemsley.
Tetranthera neesiana, Schauer in Linnæa, xix. p. 712; Linnæa, xxi. p. 525; DC. Prodr. xv. 1, p. 193.

South Mexico, Vera Cruz to Orizaba (*Müller*, 308, 808, 1248). Hb. Kew.

β. **corymbifera,** Meissn. in DC. Prodr. xv. 1, p. 193.

South Mexico (*Aschenborn*, 349).

γ. **villosa,** Meissn. loc. cit.
Tetranthera villosa, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 19).

South Mexico, mountains of Oaxaca, 8000 to 9500 feet (*Galeotti*, 251).

8. UMBELLULARIA.

Umbellularia, Nees, Syst. Laur. p. 462; Benth. et Hook. Gen. Plant. iii. p. 162.

One Californian species and the following doubtful plant:—

1. **Umbellularia? parvifolia,** Hemsley.

Frutescens, ramulis gracillimis, foliis rotundato-ovatis vix pollicaribus.

Frutex præter flores glaberrimus, ramulis gracillimis, internodiis brevissimis. *Folia* alterna, graciliter breviterque petiolata, coriacea, rotundato-ovata vel interdum fere orbicularia, 8 ad 16 lineas longa, basi rotundata vel fere truncata, apice subacuta vel rotundata, subtus pallidiora, venis minute reticulatis obscuris. *Flores* minuti, hermaphroditi?, involucrati, brevissime pedicellati; involucra breviter pedunculata, axillaria vel terminalia, 2-bracteata, 3-flora (semper?). *Bacca* 4–5 lineas diametro, globosa.

Mexico, without locality (*Gregg*, 314). Hb. Kew.

A very distinct plant in its slender branchlets and small leaves; but the material is insufficient for a complete description.

[*Dendrodaphne macrophylla*, Beurling in Kongl. Vetens.-Akad. Handl. 1854, p. 145; DC. Prodr. xv. 1, p. 259, from Panama, is a very doubtful plant.]

9. CASSYTHA.

Cassytha, Linn. Gen. Plant. n. 505; Benth. et Hook. Gen. Plant. iii. p. 164.

Twining or rambling parasitic herbs or shrubs. About fifteen species, whereof one is widely dispersed in tropical countries, one or two are South-African, one is Bornean, and all the rest are Australian.

1. **Cassytha filiformis,** Linn. Sp. Pl. ed. 1, p. 35; Benth. Fl. Austral. v. p. 311; DC. Prodr. xv. 1, p. 255 (varietates); Jacq. Amer. t. 97; Hook. Exot. Fl. t. 167.

Mexico, Sierra Madre (*Seemann*, 1980).—Tropical America, Africa, Asia, and Australia. Hb. Kew.

[*Hernandia sonora*, Linn., a common West-Indian tree, may be looked for in Central America.]

Order CXXI. PROTEACEÆ.

Proteaceæ, Benth. et Hook. Gen. Plant. iii. p. 165.

This order comprises forty-nine genera and about 950 species, which, with very few exceptions, are either shrubby or arboreous. The greater part inhabit Australasia and South Africa; and a few small genera are peculiar to South America. A very few species occur in Tropical Africa and Madagascar; the genus *Helicia* extends from Australia to India and Japan; and *Roupala* is the only genus north of the equator in America.

1. ROUPALA.

Roupala, Aubl. Pl. Guian. i. p. 83, t. 32; Benth. et Hook. Gen. Plant. iii. p. 178.

There are about thirty species, inhabiting America, from Mexico to South Brazil and Chili; and one is recorded from New Caledonia.

1. **Roupala adiantifolia,** Kl., β? Meissn. in DC. Prodr. xiv. p. 434.

COSTA RICA and Veraguas, PANAMA (*Warscewicz*).

The type is a native of Brazil.

2. **Roupala borealis,** Hemsley, n. sp. (Tab. LXXVI.)

Fere glabra, foliis (saltem superioribus) simplicibus obscure remoteque dentatis, venis primariis costaque subtus prominentibus, racemis simplicibus, pedicellis quam flores brevioribus.

Folia (saltem superiora) simplicia, longe petiolata, coriacea, ovata vel elliptica, acuminata, basi cuneata, 6–9-pollicaria, obscure remoteque dentata, supra pallida, glaberrima, venis costaque immersis, subtus fulva, glabra vel minutissime lepidota, venis primariis costaque prominenter elevatis. *Flores* fere omnino glabri, fasciculatim racemosi; racemi ex ramis vetustioribus oriundi, 3–6-pollicares; pedicelli floribus paullo breviores; ovarium glabrum vel fere glabrum, stylo clavato. *Fructus* ignotus.

SOUTH MEXICO, San Cristobal, near Orizaba (*Bourgeau*, 3128). Hb. Kew.

This differs from the simple-leaved variety of *R. martii* in the distant primary veins and midrib being very prominent on the under surface of the leaves, the former leaving the latter at a very acute angle and traversing nearly two thirds of the length of the leaf. It also differs in being almost altogether glabrous in all its parts, and in the racemes proceeding from the old wood in the only specimen seen.

EXPLANATION OF TAB. LXXVI.

Fig. 1, portion of inflorescence; 2, a flower; 3, a segment of the perianth bearing a stamen; 4, ovary and disk: all enlarged.

3. **Roupala complicata,** H. B. K. Nov. Gen. et Sp. ii. p. 153, t. 119; Benth. Bot. Voy. 'Sulphur,' p. 161; Seem. Bot. Voy. 'Herald,' p. 192; DC. Prodr. xiv. p. 427.

PANAMA, common (*Seemann*, 1579), Isle de Taboga (*Hinds*).—COLOMBIA to PERU. Hb. Kew.

4. **Roupala loranthoides,** Meissn. in DC. Prodr. xiv. p. 425.

GUATEMALA (*Friedrichsthal*).

5. **Roupala martii,** Meissn. in Mart. Fl. Bras. fasc. xiv. p. 87, t. 32. fig. 3; DC. Prodr. xiv. p. 435.

α. **simplicifolia,** Meissn. loc. cit.

COSTA RICA (*Warscewicz*); PANAMA, Veraguas (*Warscewicz*).—BRAZIL. Hb. Kew.

β. **pinnata,** Mart. loc. cit.

COSTA RICA (*Warscewicz*); PANAMA, Veraguas (*Warscewicz*).—BRAZIL.

Order CXXII. THYMELÆACEÆ.

Thymelæaceæ, Benth. et Hook. Gen. Plant iii. p. 186.

Trees or shrubs, or very rarely herbaceous. There are thirty-eight genera referred to this Order; and these comprise about 360 species, which mostly inhabit the temperate regions of the Old World, especially South Africa, the Mediterranean region, and Australasia. Several inhabit North and South America, but they are not numerous.

1. DAPHNOPSIS.

Daphnopsis, Mart. et Zucc. Nov. Gen. et Sp. i. p. 65; Benth. et Hook. Gen. Plant. iii. p. 191.

An exclusively American genus of about twenty shrubby and arboreous species, ranging from Mexico to Peru and Brazil.

1. **Daphnopsis bonplandii,** Meissn. in DC. Prodr. xiv. p. 521.

Daphne bonplandiana, Kth. Synop. i. p. 447; Linnæa, v. p. 89.
Hargasseria mexicana, C. A. Mey. in Bull. Acad. St. Pétersb. iv. n. 4; Ann. Sc. Nat. série 2, xx. p. 51.
Hargasseria schiedeana, Endl. Gen. Pl. Suppl. iv. 2, p. 68.

South Mexico, near Vera Cruz (*Humboldt & Bonpland*), Plan del Rio (*Schiede*).

β. **mollis,** Meissn. in DC. Prodr. xiv. p. 521.

South Mexico, around Papantla (*Schiede & Deppe*). Hb. Kew.

2. **Daphnopsis cestrifolia,** Meissn. in DC. Prodr. xiv. p. 523.

Daphne cestrifolia, H. B. K. Nov. Gen. et Sp. ii. p. 150.
Hargasseria cestrifolia, Endl. Gen. Pl. Suppl. iv. 2, p. 68; Benth. Pl. Hartw. p. 247.

South Mexico, Vera Cruz (*Linden,* 96; *Galeotti,* 523).—Colombia. Hb. Kew.

3. **Daphnopsis lindeni,** Meissn. in DC. Prodr. xiv. p. 523.

South Mexico, Mirador at 1000 feet (*Linden,* 95). Hb. Kew.

4. **Daphnopsis salicifolia,** Meissn. in DC. Prodr. xiv. p. 522.

Daphne salicifolia, H. B. K. Nov. Gen. et Sp. ii. p. 150.
Daphne mexicana, Spreng. Syst. Veg. ii. p. 236; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 20).
Hargasseria salicifolia, Endl. Gen. Pl. Suppl. iv. 2, p. 68.

South Mexico, Cordillera of Vera Cruz at 3000 feet (*Galeotti,* 524), near Jalapa 2000 to 3000 feet (*Galeotti,* 7025), Cuernavaca (*Humboldt & Bonpland*; *Bilimek,* 238). Hb. Kew.

[The *Penæaceæ* are a small Order of four genera and twenty-one species, restricted to South Africa; and the *Elæagnaceæ* comprise about sixteen species, referred to three genera, all of which are represented in North America, though not one extends so far south as Mexico.]

Series VI. ACHLAMYDOSPOREÆ.

Order CXXIII. LORANTHACEÆ.

Loranthaceæ, Benth. et Hook. Gen. Plant. iii. p. 205 ; Eichl. in Mart. Fl. Bras. v. 2, pp. 1–136, tt. 1–44.

Shrubby parasites, or, in a very few instances, terrestrial. There are thirteen genera and about 500 species, generally dispersed in tropical countries, rarer in temperate regions, both in the north and in the south.

1. LORANTHUS.

Loranthus, Linn. Gen. Plant. n. 443 ; Benth. et Hook. Gen. Plant. iii. p. 207.

This genus numbers about 330 species, spread over nearly the whole range of the Order, except in North America north of Mexico.

1. **Loranthus alveolatus,** H. B. K. Nov. Gen. et Sp. iii. p. 444 ; DC. Prodr. iv. p. 287 ; Griseb. in ' Bonplandia,' 1858, p. 7.

PANAMA (*Duchassaing*).—PERU.

2. **Loranthus americanus,** Jacq. Amer. p. 97, t. 67 ; Descour. Fl. Antill. vi. t. 390 ; Griseb. Fl. Brit. W. Ind. p. 311.

Loranthus jacquini, DC. Prodr. iv. p. 308 ; Seem. Bot. Voy. ' Herald,' p. 132.

MEXICO (ex *Grisebach*) ; PANAMA, Hacienda de San Juan, Veraguas (*Seemann*).

3. **Loranthus auriculatus,** D. Oliv. in Vidensk. Meddel. 1864, p. 174.

SOUTH MEXICO, between Oaxaca and Mitla (*Andrieux*, 343), Pochutla (*Liebmann*). Hb. Kew.

4. **Loranthus avicularius,** Mart. in Schult. Syst. Veg. vii. p. 132 ; DC. Prodr. iv. p. 289 ; Seem. Bot. Voy. ' Herald,' p. 132.

PANAMA, near the city of Panama (*Seemann*).—BRAZIL.

5. **Loranthus cansjeræfolius,** D. Oliv. in Vidensk. Meddel. 1864, p. 173.

COSTA RICA, near Aguacaliente, at the foot of the Volcan de Irazu (*Œrsted*).

6. **Loranthus calyculatus,** DC. Coll. Mém. vi. t. 10, et Prodr. iv. p. 308 ; Vidensk. Meddel. 1864, p. 174.

SOUTH MEXICO, Cuernavaca (*Berlandier*), without locality (*Graham, Beechey*) ; HONDURAS, Tigré I., Gulf of Fonseca (*Sinclair*) ; NICARAGUA, Segovia (*Œrsted*). Hb. Kew.

7. **Loranthus chordocladus,** D. Oliv. in Vidensk. Meddel. 1864, p. 173.

NICARAGUA, Granada (*Œrsted*) ; COSTA RICA, Pacaca (*Œrsted*).

8. **Loranthus crassipes,** D. Oliv. in Vidensk. Meddel. 1864, p. 173.

South Mexico, region of Orizaba (*Botteri*, 875; *Bourgeau*, 2547; *Müller*, 1324), Jalapa (*Galeotti*, 248). Hb. Kew.

9. **Loranthus densiflorus,** Benth. Pl. Hartw. p. 62; Walp. Rep. ii. p. 444; Seem. Bot. Voy. 'Herald,' p. 132.

South Mexico, Hacienda del Carmen (*Hartweg*, 468); Panama, Volcan de Chiriqui, Veraguas (*Seemann*). Hb. Kew.

10. **Loranthus deppeanus,** Cham. et Schl. in Linnæa, v. p. 172; DC. Prodr. iv. p. 672.

South Mexico, near Jalapa (*Schiede & Deppe*).

11. **Loranthus diversifolius,** Benth. Pl. Hartw. p. 63.

Mexico, without locality (*Graham*, 234). Hb. Kew.

12. **Loranthus glaberrimus,** D. Oliv. in Vidensk. Meddel. 1864, p. 170.

South Mexico, Guatulco (*Liebmann*).

13. **Loranthus grahami,** Benth. Pl. Hartw. p. 62; D. Oliv. in Vidensk. Meddel. 1864, p. 171.

South Mexico, Orizaba (*Botteri*, 1053), without locality (*Graham*), near San Felipe and Cuesta de San Juan del Estada (*Liebmann*). Hb. Kew.

14. **Loranthus hartwegi,** Benth. Pl. Hartw. p. 62; D. Oliv. in Vidensk. Meddel. 1864, p. 173.

South Mexico, Talea (*Hartweg*); Costa Rica, near Ujaras at 3000 feet (*Ærsted*)? Hb. Kew.

15. **Loranthus immersus,** Benth. Pl. Hartw. p. 189.

Panama (*Seemann*)?—Peru. Hb. Kew.

16. **Loranthus inconspicuus,** Benth. Bot. Voy. 'Sulphur,' p. 102.

South Mexico, San Blas (*Hinds*). Hb. Kew.

17. **Loranthus interruptus,** H. B. K. Nov. Gen. et Sp. iii. p. 440; DC. Prodr. iv. p. 292.

South Mexico, near Ario at 6000 feet (*Humboldt & Bonpland*).

18. **Loranthus karwinskyanus,** Schult. Syst. Veg. vii. p. 1641.

South Mexico, Sultepec (*Karwinski*).

19. **Loranthus liebmanni,** D. Oliv. in Vidensk. Meddel. 1864, p. 172.

South Mexico, Chinantla (*Liebmann*). Hb. Kew.

20. **Loranthus macrantherus,** Hemsley.

Psittacanthus macrantherus, Eichl. in Mart. Fl. Bras. v. 2, p. 26.

South Mexico, Sierra San Pedro Nolasco (*Karwinski*).

21. **Loranthus marginatus,** Lam.? Dict. iii. p. 596; DC. Prodr. iv. p. 288.
South Mexico, Cordillera of Vera Cruz, 4000 feet (*Galeotti*, 249).—Brazil. Hb. Kew.

22. **Loranthus mexicanus,** Presl in Schult. Syst. Veg. vii. p. 129; DC. Prodr. iv. p. 310.
Mexico (*Hænke*).

23. **Loranthus microphyllus,** H. B. K. Nov. Gen. et Sp. iii. p. 439, t. 300; DC. Prodr. iv. p. 291.
South Mexico, near Cuernavaca (*Humboldt & Bonpland*).

24. **Loranthus occidentalis,** Linn. Amœn. Acad. v. p. 396; DC. Prodr. iv. p. 287.
Panama, Paraiso (*S. Hayes*, 218), Chagres (*Fendler*, 135).—Colombia; Guiana; Jamaica. Hb. Kew.

25. **Loranthus œrstedii,** D. Oliv. in Vidensk. Meddel. 1864, p. 171.
Nicaragua, near Granada (*Ærsted*).

26. **Loranthus polyrhizos,** Mart. in Schult. Syst. Veg. vii. p. 139; DC. Prodr. iv. p. 290; Seem. Bot. Voy. 'Herald,' p. 132.
Panama, near the city of Panama (*Seemann*).—Brazil. Hb. Kew.

27. **Loranthus quercicola,** Cham. et Schl. in Linnæa, v. p. 173; Walp. Rep. ii. p. 444.
South Mexico, near Jalapa (*Schiede & Deppe*).

28. **Loranthus ramiflorus,** Moç. et Sessé in DC. Prodr. iv. p. 308; DC., Calques des Dess. Pl. Fl. Mex. 448.
Mexico (*Moçino & Sessé*).

29. **Loranthus rhynchanthus,** Benth. Bot. Voy. 'Sulphur,' p. 102; D. Oliv. in Vidensk. Meddel. 1864, p. 174.
Honduras, Isle de Tigré (*Sinclair*); Nicaragua, Realejo (*Ærsted*).

30. **Loranthus schiedeanus,** Cham. et Schl. in Linnæa, v. p. 172; DC. Prodr. iv. p. 672; D. Oliv. in Vidensk. Meddel. 1864, p. 174.
South Mexico, region of Orizaba (*Bourgeau*, 2656; *Müller*, 1687), Mirador (*Linden*, 536; *Liebmann*), Real del Monte to Zacatecas (*Coulter*, 18), between Chalco and Gonacatepec (*Andrieux*, 342); Guatemala, Mazatenango (*Bernoulli*, 409), Dueñas (*Godman & Salvin*), without locality (*Skinner*; *Friedrichsthal*); Costa Rica, Volcan de Irazu, 9500 feet (*Ærsted*). Hb. Kew.

31. **Loranthus spirostylis,** DC. Prodr. iv. p. 315; D. Oliv. in Vidensk. Meddel. 1864, p. 172.
Spirostylis hænkeana, Presl in Schult. Syst. Veg. vii. p. 163.
South Mexico, Acapulco (*Hænke*), Pelado (*Liebmann*)?

32. **Loranthus surinamensis,** Miq. in Linnæa, xviii. p. 62; Walp. Rep. v. p. 937; D. Oliv. in Vidensk. Meddel. 1864, p. 170?

Costa Rica, Volcan de Irazu, 6000 to 8000 feet (*Œrsted*).—Guiana.

33. **Loranthus tehuacanensis,** D. Oliv. in Vidensk. Meddel. 1864, p. 171.

South Mexico, Tehuacan (*Liebmann*), San Felipe, near Oaxaca (*Andrieux*, 344), Teapa, Tabasco (*Linden*, 1620); Guatemala (*Friedrichsthal*). Hb. Kew.

34. **Loranthus theobromæ,** Willd. in Schult. Syst. Veg. vii. p. 132; DC. Prodr. iv. p. 289.

Panama, Old Panama (*Seemann*, 509; *S. Hayes*, 98).—Brazil. Hb. Kew.

This and one or two other species from Panama bear names in Kew herbarium different from those given in Seemann's 'Botany of the Herald.'

35. **Loranthus venetus,** H. B. K. Nov. Gen. et Sp. iii. p. 434; Schult. Syst. Veg. vii. p. 143.

Loranthus vegetus, DC. Prodr. iv. p. 313.

South Mexico, near Cuernavaca, at about 5000 feet (*Humboldt & Bonpland*).

With regard to the name *venetus*, Schultz (loc. cit.) says "Rationem nominis specifici non intelligimus;" and DeCandolle (loc. cit.) "Nomen nec mihi nec Schultesio intelligibile, sphalmate supposito, paulo mutavi." But it seems to have been given in allusion to the glaucous colour of the foliage.

2. ARCEUTHOBIUM.

Arceuthobium, Bieb. Fl. Taur. Cauc. Suppl. p. 629; Benth. et Hook. Gen. Plant. iii. p. 213.

Five or six species, one of which is widely spread in the south of Europe, western Asia, and North-west America; the rest are endemic in North America, chiefly on the western side and in Mexico.

1. **Arceuthobium campylopodum,** Engelm. in A. Gr. Pl. Lindheim. 2, in Bost. Journ. Nat. Hist. vi. p. 214 in nota; D. Oliv. in Vidensk. Meddel. 1864, p. 177.

New Mexico.—Mexico, peak of Orizaba, at 10,000 to 11,000 feet (*Liebmann*).

2. **Arceuthobium cryptopodum,** Engelm. in A. Gr. Pl. Lindheim. 2, in Bost. Journ. Nat. Hist. vi. p. 214; D. Oliv. in Vidensk. Meddel. 1864, p. 177; Hook. Ic. Pl. t. 1037.

Arceuthobium vaginatum, Eichl. in Mart. Fl. Bras. v. 2, p. 105, t. 31.

Viscum vaginatum, H. B. K. Nov. Gen. et Sp. iii. p. 445.

Texas.—Mexico, peak of Orizaba, around Vaqueria del Jacal, at 10,000 to 11,000 feet (*Liebmann*). Hb. Kew.

3. **Arceuthobium oxycedri,** Bieb. Fl. Taur. Cauc. Suppl. p. 629; D. Oliv. in Journ. Linn. Soc. vii. p. 104.

Arceuthobium americanum, Nutt., ex Engelm. in Bost. Journ. Nat. Hist. vi. p. 214, in nota; Wats. Bot. Calif. ii. p. 106.

Wyoming to Oregon, and southward to Colorado and California.—Mexico, peak of Orizaba 12,000 feet (*Linden*, 540), summit of San Felipe (*Andrieux*, 349).—South Europe; West Asia. Hb. Kew.

It is uncertain whether Andrieux and Linden's specimens be correctly referred to this species, whatever limitation we accept. Engelmann regards the American form as a species distinct from *A. oxycedri.*

4. **Arceuthobium,** sp.

North Mexico, Sierra Madre (*Seemann*, 2138). Hb. Kew.

3. DENDROPHTHORA.

Dendrophthora, Eichl. in Mart. Fl. Bras. v. 2, p. 102, t. 31; Benth. et Hook. Gen. Plant. iii. p. 214.

About twenty-five species are known, most of which inhabit the West Indies, and the remainder continental America.

1. **Dendrophthora biserrula,** Eichl. in Mart. Fl. Bras. v. 2, p. 104.

Guatemala (*Friedrichsthal*); Costa Rica (*Hoffmann*).—Colombia. Hb. Kew.

4. PHORADENDRON.

Phoradendron, Nutt. in Journ. Acad. Philad. ser. 2, i. p. 185; Benth. et Hook. Gen. Plant. iii. p. 214.

An exclusively American genus of about eight species, ranging from Oregon to the Argentine Republic.

1. **Phoradendron angustifolium,** Eichl. in Mart. Fl. Bras. v. 2, p. 115, in obs. ad. n. 13.

Loranthus angustifolius, H. B. K. Nov. Gen. et Sp. iii. p. 442.

Viscum falcatum, Cham. et Schl. in Linnæa, v. p. 172, nec Hook. Ic. t. 368.

Viscum schiedeanum, DC. Prodr. iv. p. 670.

South Mexico, Jalapa (*Linden*, 538; *Schiede & Deppe*), around Oaxaca (*Andrieux*, 346); Guatemala (*Friedrichsthal*); Costa Rica (*Hoffmann*).—Peru. Hb. Kew.

2. **Phoradendron annulatum,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.

Costa Rica (*Œrsted*).

3. **Phoradendron bolleanum,** Hemsley.

Viscum bolleanum, Seem. Bot. Voy. 'Herald,' p. 295, t. 63.

North Mexico, Sierra Madre (*Seemann*, 2139). Hb. Kew.

4. **Phoradendron brachystachyum,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.

Viscum brachystachyum, DC. Prodr. iv. p. 280.

South Mexico, Mirador (*Linden*, 541), Jalapa 4000 feet (*Galeotti*, 2694), Vera Cruz to Orizaba (*Müller*, 1755), Acalzingo and Tehuacan (*Liebmann*). Hb. Kew.

5. **Phoradendron brevifolium,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.

South Mexico, near Tehuacan (*Liebmann*).

6. **Phoradendron californicum,** Nutt. in Journ. Acad. Philad. n. s. i. p. 185; Torr. Bot. U.S. & Mex. Bound. Surv. p. 185; Wats. Bot. Calif. ii. p. 105.

California.—North Mexico, along the Gila (*Schott*).

7. **Phoradendron corynarthron,** Eichl. in Fl. Bras. v. 2, p. 115, in nota ad n. 13.

Phoradendron rubrum, Griseb., ex Eichl.

Panama, Volcan de Chiriqui (*Wagner*).

8. **Phoradendron flavens,** Griseb. Fl. Brit. W. Ind. p. 313; Mart. Fl. Bras. v. 2, p. 116.

Viscum flavens, Sw. Fl. Ind. Occ. p. 266; DC. Prodr. iv. p. 282.

Mexico (ex *Grisebach*); Nicaragua, Chontales (*Tate*); Costa Rica (*Endres*).—West Indies to Brazil. Hb. Kew.

9. **Phoradendron flavescens,** Nutt. in Journ. Acad. Philad. n. s. i. p. 185; A. Gr. Pl. Fendl. p. 59; D. Oliv. in Vidensk. Meddel. 1864, p. 176.

New Jersey and Illinois southward to New Mexico and Texas.—North Mexico, along the Rio Grande (*Wislizenus*); South Mexico, Colipa (*Liebmann*).

10. **Phoradendron hexastichum,** Griseb. Fl. Brit. W. Ind. p. 313; D. Oliv. in Vidensk. Meddel. 1864, p. 175.

Viscum hexastichum, DC. Prodr. iv. p. 282.

South Mexico, Mirador (*Liebmann*).—Cuba; St. Vincent. Hb. Kew.

11. **Phoradendron juniperinum,** Engelm. in A. Gr. Pl. Fendl. p. 58; Wats. Bot. Calif. ii. p. 105.

North California to Arizona and New Mexico.—Mexico, Desierto Viejo (*Bourgeau*, 1115)? Hb. Kew.

12. **Phoradendron latifolium,** Griseb. Fl. Brit. W. Ind. p. 314; D. Oliv. in Vidensk. Meddel. 1864, p. 175.

Viscum latifolium, Sw. Fl. Ind. Occ. p. 268.

Viscum teretifolium, DC. Prodr. iv. p. 280.

South Mexico, Mirador (*Liebmann*), Vera Cruz (*Linden*, 539), region of Orizaba (*Bourgeau*, 2175); Costa Rica (*Œrsted*); Panama, Chagres (*Fendler*, 136).—Cuba; Jamaica. Hb. Kew.

13. **Phoradendron nervosum,** D. Oliv. in Vidensk. Meddel. 1864, p. 175.

South Mexico, region of Orizaba (*Müller*, 1219; *Botteri*, 873; *Bourgeau*, 2546), Colipa (*Liebmann*), valley of Cordova (*Bourgeau*, 1483); Costa Rica, Candelaria (*Œrsted*); Panama, Boquete (*Seemann*). Hb. Kew.

14. **Phoradendron pachyarthron,** Eichl. in Mart. Fl. Bras. v. 2, p. 122, in nota ad n. 23.

South Mexico, Baños (*Ehrenberg*).

15. **Phoradendron pauciflorum,** Torr. in Whipple's Rep. p. 134, et Bot. U.S. & Mex. Bound. Surv. p. 185.

North Mexico, Sierra del Pajarito, Sonora (*Schott*).

16. **Phoradendron reichenbachianum,** D. Oliv. in Vidensk. Meddel. 1864, p. 175.

Viscum reichenbachianum, Seem. Bot. Voy. 'Herald,' p. 294, t. 62.

North Mexico, Sierra Madre (*Seemann*, 2141); South Mexico, without locality (*Graham; Liebmann*). Hb. Kew.

17. **Phoradendron rubrum,** Griseb. Fl. Brit. W. Ind. p. 314; D. Oliv. in Vidensk. Meddel. 1864, p. 175.

Viscum rubrum, Linn. Sp. Pl. p. 1451; DC. Prodr. iv. p. 281.
Viscum kunthianum, DC. Prodr. iv. p. 283.
Loranthus viscifolius, H. B. K. Nov. Gen. et Sp. iii. p. 443.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 799½); South Mexico, Orizaba (*Müller*, 1001; *Sallé*), Mirador (*Liebmann*); Panama, Paraiso (*S. Hayes*, 323).—Southward to Peru and in the West Indies. Hb. Kew.

It is probable that some of the specimens referred to this species in the Kew herbarium belong to *P. corynarthron*, Eichl.

18. **Phoradendron robustissimum,** Eichl. in Mart. Fl. Bras. v. 2, p. 122, in nota ad n. 23.

Guatemala (*Friedrichsthal*). Hb. Kew.

19. **Phoradendron squamigerum,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.

Viscum squamigerum, Benth. Pl. Hartw. p. 190.

Costa Rica, summit of Volcan de Irazu, 11,000 feet (*Œrsted*).

20. **Phoradendron tomentosum,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.

Viscum tomentosum, DC. Prodr. iv. p. 670.

South Mexico, Acapulco (*Liebmann; Hinds*), Real del Monte (*Berlandier*). Hb. Kew.

21. **Phoradendron trinervium,** Griseb. Fl. Brit. W. Ind. p. 314; D. Oliv. in Vidensk. Meddel. 1864, p. 175.

Costa Rica (*Œrsted*).—Venezuela; West Indies.

22. **Phoradendron velutinum,** D. Oliv. in Vidensk. Meddel. 1864, p. 176.
Viscum velutinum, DC. Prodr. iv. p. 281.

South Mexico, around Toluca (*Andrieux*, 347; *Berlandier*), valley of Mexico (*Bourgeau*, 782, 1116; *Schaffner*, 188), Chinantla (*Liebmann*). Hb. Kew.

5. ANTIDAPHNE.

Antidaphne, Pœpp. et Endl. Nov. Gen. et Sp. ii. p. 70, t. 199; Benth. et Hook. Gen. Plant. iii. p. 216.

Two species in Colombia and Peru.

1. **Antidaphne viscoidea,** Pœpp. et Endl. Nov. Gen. et Sp. ii. p. 70, t. 199; Walp. Rep. v. p. 935; D. Oliv. in Vidensk. Meddel. 1864, p. 177.

Costa Rica, Volcan de Irazu (*Œrsted*); Panama, Boquete (*Seemann*, 1619).—Southward to Peru. Hb. Kew.

Order CXXIV. SANTALACEÆ.

Santalaceæ, Benth. et Hook. Gen. Plant. iii. p. 217.

Trees, shrubs, or slender herbs, the herbaceous species often root-parasites. There are twenty-eight genera, comprising upwards of 200 species, generally dispersed in tropical and temperate regions, though hitherto only one member of the order has been found within our limits.

1. COMANDRA.

Comandra, Nutt. Gen. N. Am. Pl. i. p. 157; Benth. et Hook. Gen. Plant. iii. p. 224.

Four herbaceous or half-shrubby species, whereof one inhabits south-eastern Europe and the rest North America.

1. **Comandra umbellata,** Nutt. Gen. N. Am. Pl. i. p. 157; DC. Prodr. xiv. p. 636. β. **angustifolia,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 185.
Comandra pallida β. *angustifolia,* DC. Prodr. xiv. p. 637.

Arizona; New Mexico.—North Mexico, Chihuahua (*Wright*). Hb. Kew.

Typical *C. umbellata* is widely spread from Oregon, Saskatchewan, and the northern Atlantic States southward.

Order CXXV. BALANOPHOREÆ.

Balanophoreæ, Benth. et Hook. Gen. Plant. iii. p. 232.

Fleshy, herbaceous root-parasites, mostly inhabiting the tropics, a few South Africa, one the Mediterranean region, and one New Zealand. There are about thirty-five species, which are referred to fourteen genera.

1. LANGSDORFFIA.

Langsdorffia, Mart. in Eschwege's Journ. Bras. ii. p. 178; Benth. et Hook. Gen. Plant. iii. p. 236.

A monotype.

1. **Langsdorffia hypogæa,** Mart. in Eschwege's Journ. Bras. ii. p. 178, t. 5, et in Nov. Gen. et Sp. iii. p. 181, tt. 298 et 299; Hook. f. in Trans. Linn. Soc. xxii. t. 2; DC. Prodr. xvii. p. 140.

Thonningia mexicana et *T. janeirensis,* Liebm. in Forhandl. Skand. Naturf. Christ. 1847, p. 180.

South Mexico, Oaxaca (*Liebmann*).—Colombia and Venezuela to Southern Brazil.

2. HELOSIS.

Helosis, Rich. in Mém. Mus. Par. viii. p. 416, t. 20; Benth. et Hook. Gen. Plant. iii. p. 237.

Three species (or varieties of one), inhabiting Tropical America.

1. **Helosis mexicana,** Liebm. in Forhandl. Skand. Naturf. Christ. 1847, p. 181; Eichl. in DC. Prodr. xvii. p. 136; Hook. f. in Trans. Linn. Soc. xxii. p. 59, tt. 15 et 16.

South Mexico, Mirador (*Linden,* 146), region of Orizaba (*Bourgeau,* 3030), mountains of Vera Cruz and Oaxaca 3000 to 5000 feet (*Liebmann*).—Colombia. Hb. Kew.

3. CORYNÆA.

Corynæa, Hook. f. in Trans. Linn. Soc. xxii. p. 31; Benth. et Hook. Gen. Plant. iii. p. 237.

Four species, restricted to the Andes, from Colombia to Peru, and Costa Rica.

1. **Corynæa crassa,** Hook. f. in Trans. Linn. Soc. xxii. p. 54, t. 13; DC. Prodr. xvii. p. 137.

Costa Rica, Volcan de Barba (*Wendland*).—Colombia.

Series VII. UNISEXUALES.

Order CXXVI. EUPHORBIACEÆ.

Euphorbiaceæ, Benth. et Hook. Gen. Plant. iii. p. 239.

A large order of trees, shrubs, and herbaceous plants, inhabiting tropical and temperate countries, absent from alpine and polar regions. It comprises upwards of 3000 species, referred to 197 genera.

1. PEDILANTHUS.

Pedilanthus, Neck. Elem. Bot. ii. p. 354; Benth. et Hook. Gen. Plant. iii. p. 257.

An exclusively Tropical-American genus of about fifteen shrubby species. They range from Mexico and the West Indies southward to Brazil.

1. **Pedilanthus aphyllus,** Boiss. in Kl. et Garcke, Tricocc. p. 106, et in DC. Prodr. xv. 2, p. 6.

NEW SPAIN (hb. *Pavon*).

2. **Pedilanthus articulatus,** Boiss. in DC. Prodr. xv. 2, p. 6.

Diadenaria articulata, Kl. et Garcke, Tricocc. p. 108.

NEW SPAIN ? (hb. *Pavon*).

3. **Pedilanthus bracteatus,** Boiss. in DC. Prodr. xv. 2, p. 6.

Euphorbia bracteata, Jacq. Hort. Schönb. iii. p. 14, t. 276.

MEXICO ?

4. **Pedilanthus finckii,** Boiss. in DC. Prodr. xv. 2, p. 1261.

SOUTH MEXICO, at the source of the Atoyac (*Finck*). Hb. Kew.

5. **Pedilanthus ghiesbreghtianus,** Boiss. in DC. Prodr. xv. 2, p. 1261.

MEXICO (*Ghiesbreght*).

6. **Pedilanthus involucratus,** Boiss. in DC. Prodr. xv. 2, p. 6.

Diadenaria involucrata, Kl. et Garcke, Tricocc. p. 107.

MEXICO.

7. **Pedilanthus œrstedii,** Kl. et Garcke, Tricocc. p. 106 ; DC. Prodr. xv. 2, p. 6.

NICARAGUA, near Segovia (*Œrsted*).

8. **Pedilanthus pavonis,** Boiss. in DC. Prodr. xv. 2, p. 6.

Diadenaria pavonis, Kl. et Garcke, Tricocc. p. 108.

NEW SPAIN (hb. *Pavon*).

9. **Pedilanthus ramosissimus,** Boiss. in DC. Prodr. xv. 2, p. 5.

Pedilanthus parasiticus, Kl. et Garcke, Tricocc. p. 105, nec Boiss.

NEW SPAIN (hb. *Pavon*).

10. **Pedilanthus tithymaloides,** Poit. in Ann. Mus. Par. xix. p. 390, t. 19; DC. Prodr. xv. 2, p. 5.

Euphorbia tithymaloides, Linn. Hort. Cliff. p. 198 ; Descour. Fl. Antill. t. 118 ; Bot. Reg. t. 837.
Euphorbia carinata, Donn, Hort. Cantab. ed. 9, p. 155 ; Bot. Mag. t. 2514.
Euphorbia canaliculata, Lodd. Bot. Cab. t. 727.
Crepidaria myrtifolia, Haw. Succ. p. 136.

COSTA RICA (*Endres*, cult.).—CUBA ; VENEZUELA. Hb. Kew.

2. EUPHORBIA.

Euphorbia, Linn. Gen. Plant. n. 609 ; Benth. et Hook. Gen. Plant. iii. p. 258.

Upwards of 600 species of this genus are known ; and they are generally diffused in temperate regions, rarer in tropical regions. They are mostly herbaceous, though some are half-shrubby, and some shrubby, whilst others have fleshy stems and strongly resemble some of the *Cerei*.

In addition to those indicated as existing in Kew herbarium, there is a considerable number of distinct unnamed species.

1. **Euphorbia adenoptera,** Bertol. Misc. iii. p. 436, t. 23. fig. 3; DC. Prodr. xv. 2, p. 49; Boiss. Ic. Euphorb. t. 19.

Euphorbia dioica, H. B. K. Nov. Gen. et Sp. ii. p. 53.
Euphorbia callitrichoides, Schauer in Linnæa, xxv. p. 27, non H. B. K.
Euphorbia anceps, Benth. Bot. Voy. 'Sulphur,' p. 162.
Euphorbia ocymoides, Hook. et Arn. Bot. Beech. Voy. p. 310.
Anisophyllum lindenianum, A. densiflorum et *A. amœnum,* Kl. et Garcke, Tricocc. pp. 37, 28, et 33.

Florida to Texas and New Mexico.—North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 816, 819); South Mexico, region of Orizaba (*Botteri*, 594, 595; *Galeotti*, 3779), Papantla (*Schiede*), common in the valley of Mexico (*Schaffner*), Zipimeo (*Gregg*), Real del Monte (*Coulter*, 1447); Guatemala, San Augustin (*Bernoulli*, 985).—North part of South America, and the West Indies. Hb. Kew.

β. **indivisa,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 187; DC. Prodr. xv. 2, p. 49.

North Mexico, at the copper-mines within the old boundory (*Wright*). Hb. Kew.

2. **Euphorbia adiantoides,** Lam. Dict. ii. p. 426; DC. Prodr. xv. 2, p. 57.

Leptopus hartwegi, Kl. et Garcke, Tricocc. p. 46.

North Mexico (*Palmer*, 1141).—Peru. Hb. Kew.

3. **Euphorbia angusta,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 189; DC. Prodr. xv. 2, p. 18.

Texas; New Mexico.—North Mexico, valley of the Rio Grande (*Wright*). Hb. Kew.

4. **Euphorbia antisyphilitica,** Zucc. in Acad. Monac. vii. p. 272; DC. Prodr. xv. 2, p. 69.

Euphorbia occulta, Kl. in. Seem. Bot. Voy. 'Herald,' p. 277.

Texas.—North Mexico, Sierra Madre (*Seemann*, 2164), mountains west of Saltillo (*Palmer*, 1217), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 821); South Mexico, Zimapan (*Coulter*, 763). Hb. Kew.

5. **Euphorbia anychioides,** Boiss. Cent. Euphorb. p. 12, et in DC. Prodr. xv. 2, p. 39.

South Mexico, Villalpando, Guanajuato (*Mendez*).

6. **Euphorbia ammannioides,** H. B. K. Nov. Gen. et Sp. ii. p. 55; DC. Prodr. xv. 2, p. 28.

South Mexico, near Vera Cruz (hb. *Lenormand*); Nicaragua (*Friedrichsthal*); Panama, Chagres (*Fendler*, 276).—Venezuela. Hb. Kew.

7. **Euphorbia ammatotricha,** Boiss. Cent. Euphorb. p. 10, et in DC. Prodr. xv. 2, p. 29.

Mexico, Victoria (*Karwinski*).

8. **Euphorbia apocynoides,** Kl. in Seem. Bot. Voy. 'Herald,' p. 99; DC. Prodr. xv. 2, p. 61.

Panama, Punta de Garachine (*Seemann*). Hb. Kew.

9. **Euphorbia arenaria,** H. B. K. Nov. Gen. et Sp. ii. p. 57; DC. Prodr. xv. p. 56.

Eumecanthus arenarius, Kl. et Garcke, Tricocc. p. 43.

Guatemala, Cumbre de Atitlan (*Bernoulli*, 643).—Colombia to Peru. Hb. Kew.

10. **Euphorbia ariensis,** H. B. K. Nov. Gen. et Sp. ii. p. 57; DC. Prodr. xv. 2, p. 56.

Eumecanthus ariensis et *E. benthamianus,* Kl. et Garcke, Tricocc. p. 42.

South Mexico, around Ario, 4000 to 7000 feet (*Galeotti*, 3736; *Humboldt & Bonpland*), Pazcuaro (*Hartweg*, 387). Hb. Kew.

11. **Euphorbia arizonica,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 186; DC. Prodr. xv. 2, p. 48.

Arizona.—North Mexico, San Yanos, Sonora (*Schott*),

12. **Euphorbia astroites,** Fisch. et Mey. Animad. Ind. Sem. Hort. Petrop. 1845; DC. Prodr. xv. 2, p. 57; Boiss. Ic. Euphorb. t. 35.

Mexico, Tampacoala (*Karwinski*).

13. **Euphorbia astyla,** Engelm.; DC. Prodr. xv. 2, p. 40.

North Mexico, valley of the Rio Nazas, Chihuahua (*Gregg*).

14. **Euphorbia barbellata,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 190; DC. Prodr. xv. 2, p. 73.

Euphorbia morisoniana, Kl. in Seem. Bot. Voy. 'Herald,' p. 100, ex parte.

North Mexico, on the Rio Grande (*Wright*); South Mexico, near Cuernavaca (*Berlandier*); Panama, Volcan de Chiriqui (*Seemann*). Hb. Kew.

15. **Euphorbia bilobata,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 190; DC. Prodr. xv. 2, p. 52.

New Mexico.—North Mexico, Sonora (*Wright*). Hb. Kew.

16. **Euphorbia boerhavifolia,** Boiss. in DC. Prodr. xv. 2, p. 54.

Adenopetalum boerhaaviifolium, Kl. et Garcke, Tricocc. p. 47.

Costa Rica, Volcan de Irazu (*Œrsted*).

17. **Euphorbia buxifolia,** Lam. Dict. ii. p. 421; DC. Prodr. xv. 2, p. 15; Descour. Fl. Antill. vi. t. 418.

Florida.—British Honduras (*Strangways*).—Venezuela and throughout the West Indies. Hb. Kew.

18. **Euphorbia calyculata,** H. B. K. Nov. Gen. et Sp. ii. p. 59; DC. Prodr. xv. 2, p. 106.

Tithymalus calyculatus, Kl. et Garcke, Tricocc. p. 81.

South Mexico, near Lake Pazcuaro, Michoacan (*Humboldt & Bonpland*); New Spain (hb. *Pavon*).

19. **Euphorbia campestris,** Cham. et Schl. in Linnæa, v. p. 84; DC. Prodr. xv. 2, p. 146.

North Mexico, Parras (*Palmer*, 1227), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 803); South Mexico, valley of Mexico (*Schaffner*, 470; *Bourgeau*, 637, 1292), Toluca (*Andrieux*, 101), near Real del Monte at 7000 feet (*Galeotti*, 3728), Chiapas (*Ghiesbreght*), Guanajuato (*Hartweg*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 617), without precise localities (*Parkinson; Graham; Halsted*, and others). Hb. Kew.

β. **esulæformis,** Boiss. in DC. Prodr. xv. 2, p. 147; Schauer in Linnæa, xx. p. 729 (species).

North Mexico, Sonora (*Smith*).

γ. **seemanni,** Boiss. in DC. Prodr. xv. 2, p. 147; Kl. in Seem. Bot. Voy. 'Herald,' p. 276 (species).

North Mexico, Sierra Madre (*Seemann*, 2160). Hb. Kew.

20. **Euphorbia capitellata,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 188; DC. Prodr. xv. 2, p. 22.

North Mexico, San Bernardino, Sonora (*Wright*, 1849). Hb. Kew.

21. **Euphorbia chamæsula,** Boiss. Cent. Euphorb. p. 38, et in DC. Prodr. xv. 2, p. 162.

Texas; New Mexico.—North Mexico, San Luis mountains, Sonora (*Smith*). Hb. Kew.

22. **Euphorbia colorata,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 190; DC. Prodr. xv. 2, p. 73.

North Mexico, Santa Cruz, Sonora (*Thurber*).

23. **Euphorbia colletioides,** Benth. Bot. Voy. 'Sulphur,' p. 163; DC. Prodr. xv. 2, p. 61.

Euphorbia recta, Kl. in Seem. Bot. Voy. 'Herald,' p. 277.

North Mexico, Sierra Madre (*Seemann*, 2161); South Mexico, Acapulco (*Sinclair*). Hb. Kew.

24. **Euphorbia cotinifolia,** Linn. Amœn. Acad. iii. p. 112; DC. Prodr. xv. 2, p. 59; Commel. Hort. Amst. i. t. 15.

Alectoroctonum cotinifolium, Schl. in Linnæa, xix. p. 252, et *A. willdenowii,* Kl. et Garcke, Tricocc p. 41.

GUATEMALA, Llanos at the base of Volcan de Fuego (*Godman & Salvin*).—WEST INDIES and southwards to BUENOS AYRES. Hb. Kew.

25. **Euphorbia cumbræ,** Boiss. Cent. Euphorb. p. 16, et in DC. Prodr. xv. 2, p. 48.

MEXICO, Santa Madre, above Victoria (*Karwinski*).

26. **Euphorbia cuphosperma,** Boiss. in DC. Prodr. xv. 2, p. 73.

Euphorbia dentata γ. *cuphosperma,* Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 190.

NORTH MEXICO, copper-mines within the old boundary (*Wright*).

27. **Euphorbia delicatula,** Boiss. Cent. Euphorb. p. 12, et in DC. Prodr. xv. 2, p. 55.

NEW SPAIN (hb. *Pavon*).

28. **Euphorbia dentata,** Michx. Fl. Bor.-Am. ii. p. 211; DC. Prodr. xv. 2, p. 72.

Poinsettia dentata et *P. schiedeana*, Kl. et Garcke, Tricocc. p. 102.

OHIO and MISSOURI southward.—NORTH MEXICO, Soledad and Parras (*Palmer*, 1222, 1224), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 805); SOUTH MEXICO, Orizaba (*Botteri*, 582), Real del Monte (*Coulter*, 1439), near Tacubaya (*Bourgeau*, 640); GUATEMALA (*Skinner*). Hb. Kew.

β. **lasiocarpa,** Boiss. in DC. Prodr. xv. 2, p. 72.

MEXICO, near Tanquesillos (*Karwinski*).

δ. **rigida,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 190.

NORTH MEXICO, Rio San Pedro, Sonora (*Wright*), Monterey (*Edwards*).

29. **Euphorbia dioscoreoides,** Boiss. Cent. Euphorb. p. 22, et Ic. Euphorb. t. 37, et in DC. Prodr. xv. 2, p. 58.

SOUTH MEXICO, Zimapan (*Coulter*, 1460); GUATEMALA, below Santa Aña (*Bernoulli*, 1079); NEW SPAIN (hb. *Pavon*). Hb. Kew.

30. **Euphorbia discolor,** Boiss. in DC. Prodr. xv. 2, p. 54.

Adenopetalum discolor, Kl. et Garcke, Tricocc. p. 49.

COSTA RICA, Aguacate and near San Jose (*Œrsted*).

31. **Euphorbia exstipulata,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 189; DC. Prodr. xv. 2, p. 53; Boiss. Ic. Euphorb. t. 29.

TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Thurber*). Hb. Kew.

32. **Euphorbia fendleri,** Torr. et A. Gr. Pacif. Railr. Rep. ii. p. 175; DC. Prodr. xv. 2, p. 38.

TEXAS; NEW MEXICO.—NORTH MEXICO, Sonora (*Thurber*). Hb. Kew.

33. **Euphorbia floribunda,** Engelm.; DC. Prodr. xv. 2, p. 39.

SOUTH MEXICO, Guadalajara (*Gregg*, 856). Hb. Kew.

34. **Euphorbia florida,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 189; DC. Prodr. xv. 2, p. 46; Boiss. Ic. Euphorb. t. 14.

North Mexico, Sonora (*Wright*, 1829; *Thurber*). Hb. Kew.

35. **Euphorbia francoana,** Boiss. Cent. Euphorb. p. 22; DC. Prodr. xv. 2, p. 58.

South Mexico, Oaxaca (*Franco*); New Spain (hb. *Pavon*).

36. **Euphorbia friedrichsthalii,** Boiss. in DC. Prodr. xv. 2, p. 61.

Guatemala (*Friedrichsthal*).

37. **Euphorbia fruticulosa,** Engelm.; DC. Prodr. xv. 2, p. 38.

North Mexico, Saltillo (*Gregg*, 506). Hb. Kew.

38. **Euphorbia fulgens,** Karw. in Otto & Dietr. Allg. Gart. Zeit. 1834, p. 26; Paxt. Mag. Bot. iv. t. 31; DC. Prodr. xv. 2, p. 68.

Euphorbia jacquiniæflora, Hook. Bot. Mag. t. 3673.

Tricherostigma fulgens, Kl. et Garcke, Tricocc. p. 42.

South Mexico, Zacatepec (*Karwinski*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 65). Hb. Kew.

39. **Euphorbia furcillata,** H. B. K. Nov. Gen. et Sp. ii. p. 60; DC. Prodr. xv. 2, p. 147; Boiss. Ic. Euphorb. t. 98.

South Mexico, around Moran, Real del Monte, and Pachuca at 7000 to 8000 feet (*Humboldt & Bonpland*).

40. **Euphorbia geniculata,** Ort. Dec. p. 16; DC. Prodr. xv. p. 72.

Euphorbia prunifolia, Jacq. Hort. Schönb. iii. t. 277; Reichb. Hort. Bot. t. 174.

Euphorbia elliptica, Lam. Dict. ii. p. 425.

Euphorbia frangulæfolia, H. B. K. Nov. Gen. et Sp. ii. p. 62.

Poinsettia geniculata, P. frangulæfolia, P. ruiziana et *P. prunifolia,* Kl. et Garcke, Tricocc. pp. 101, 102 et 104.

Texas.—North Mexico, south of El Paso (*Wright*), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 804); South Mexico, region of Orizaba (*Bilimek*, 374; *Bourgeau*, 2662; *Botteri*, 583, 584; *Müller*, 929), Zimapan (*Coulter*, 1440), valley of Cordova (*Bourgeau*, 1692), Tehuacan, 5500 feet (*Galeotti*, 3747), Mirador (*Linden*, 789); Panama (*Seemann*, 1652; *S. Hayes*, 397).—Southward to Peru and Brazil, and in the West Indies. Hb. Kew.

41. **Euphorbia glaberrima,** Kl. in Seem. Bot. Voy. 'Herald,' p. 276; DC. Prodr. xv. 2, p. 39.

North Mexico, Sierra Madre (*Seemann*).

42. **Euphorbia glyptosperma,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 187; DC. Prodr. xv. 2, p. 48; Boiss. Ic. Euphorb. t. 18.

Saskatchewan and Missouri southward.—North Mexico, along the Rio Grande *Wright*).

43. **Euphorbia graminea,** Jacq. Stirp. Am. p. 151; Obs. Bot. t. 31; DC. Prodr. xv. 2, p. 54.

Euphorbia nudiflora, Lam. Dict. ii. p. 426.
Euphorbia humboldtii, Willd. Enum. Pl. Hort. Berol. p. 503.
Euphorbia leptalea, Schauer in Linnæa, xx. p. 728.
Euphorbia canaliculata, Pers. Ench. ii. p. 13.
Euphorbia nuda, Steud. Nom. Bot. i. p. 613.
Anisophyllum humboldtii, Haw. Succ. p. 161.
Adenopetalum gramineum, A. hoffmannii, A. œrstedii, A. ellipticum et *A. mexicanum,* Kl. et Garcke, Tricocc. pp. 47, 48 et 50.

South Mexico, Orizaba (*Botteri*, 586, 587, 588, 589), valley of Mexico (*Bourgeau*, 639), Jalapa, Vera Cruz (*Galeotti*, 781, 3762); Panama, Boquete (*Seemann*, 1241). —Venezuela; Guiana; Brazil.

γ. **acutifolia,** Boiss. in DC. Prodr. xv. 2, p. 54.

Adenopetalum pubescens et *A. irazuense,* Kl. et Garcke, Tricocc. pp. 49 et 50.

Costa Rica, Volcan de Irazu (*Œrsted*).

ε. **subsinuata,** Boiss. in DC. Prodr. xv. 2, p. 54.

Adenopetalum subsinuatum, Kl. et Garcke, Tricocc. p. 48.

Costa Rica (*Hoffmann*).

44. **Euphorbia greggii,** Engelm; DC. Prodr. xv. 2, p. 147.

North Mexico, San Antonio near Saltillo (*Gregg*).

45. **Euphorbia grisea,** Engelm.; DC. Prodr. xv. 2, p. 41.

North Mexico, Cerralbo, Nuevo Leon (*Gregg*), Monterey (*Eaton*).

46. **Euphorbia hartwegiana,** Boiss. in DC. Prodr. xv. 2, p. 31.

South Mexico, Guanajuato (*Hartweg*). Hb. Kew.

47. **Euphorbia heterophylla,** Linn. Amœn. Acad. iii. p. 112; DC. Prodr. xv. 2, p. 72.

Illinois to Peru and Brazil. Hb. Kew.

α. **genuina,** Boiss. in DC. Prodr. xv. 2, p. 72; Bot. Reg. t. 765.

Poinsettia heterophylla et *P. edwardsii,* Kl. et Garcke, Tricocc. p. 104.

Texas.—North Mexico.—Colombia.

β. **cyathophora,** Boiss. loc. cit.; Jacq. Ic. Pl. Rar. t. 480 (species).

Poinsettia cyathophora, Kl. et Garcke, loc. cit.

Chiefly in Mexico and the West Indies.

48. **Euphorbia hoffmanniana,** Boiss. in DC. Prodr. xv. 2, p. 99, et Ic. Euphorb. t. 50.

Euphorbiastrum hoffmannianum, Kl. et Garcke, Tricocc. p. 101.

Costa Rica, San José (*Hoffmann*), without locality (*Endres*, 117). Hb. Kew.

49. **Euphorbia hypericifolia,** Linn. Hort. Cliff. p. 198; DC. Prodr. xv. 2, p. 23; Hook. Exot. Fl. t. 36.

Euphorbia cuspidata, Bertol. Misc. Bot. iii. p. 433, t. 22. fig. 2.

Anisophyllum hyssopifolium, Kl. et Garcke.

North Mexico, Chihuahua (*Potts*), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 808); South Mexico, around Oaxaca (*Andrieux*, 100), region of Orizaba (*Müller*, 30; *Botteri*, 593; *Bourgeau*), Bolaños and Zimapan (*Coulter*, 1436, 1438), Puente Nacional (*Linden*, 785), La Antigua, Vera Cruz (*Galeotti*, 3760); Guatemala, Volcan de Fuego 4600 feet (*Salvin*), Mazatenango (*Bernoulli*, 404); Nicaragua, Greytown (*Tate*); Panama, Chagres (*Fendler*, 275, 277).—And widely dispersed in the West Indies and the warmer parts of South America. Hb. Kew.

50. **Euphorbia karwinskyi,** Boiss. Cent. Euphorb. p. 6, et in DC. Prodr. xv. 2, p. 21.

New Mexico.—Mexico, Huajutla and Hacienda de Tamaloc (*Karwinski*).

51. **Euphorbia lacera,** Boiss. Cent. Euphorb. p. 22, et in DC. Prodr. xv. 2, p. 53, et Ic. Euphorb. t. 30.

Mexico (hb. *Pavon*).

52. **Euphorbia lancifolia,** Schl. in Linnæa, vii. p. 143; DC. Prodr. xv. 2, p. 59.

Poinsettia lancifolia, Kl. et Garcke, Tricocc. p. 103.

South Mexico, Misantla (*Schiede*), Orizaba (*Botteri*, 581), valley of Cordova (*Bourgeau*, 1702). Hb. Kew.

53. **Euphorbia lasiocarpa,** Kl. in Nov. Act. Nat. Cur. xix. Suppl. p. 414; DC. Prodr. xv. 2, p. 23.

South Mexico, Oaxaca (*Franco*), Zimapan and Bolaños (*Coulter*, 1437); Honduras (*Hjalmarson*); Costa Rica (*Hoffmann*); Panama, Chagres (*Fendler*, 271).—Colombia to Peru and Guiana and in the West Indies. Hb. Kew.

54. **Euphorbia lathyris,** Linn. Sp. Pl. p. 655; DC. Prodr. xv. 2, p. 99.

North Mexico, Saltillo (*Palmer*, 2059); South Mexico, Desierto Viejo (*Bourgeau*, 1290). Hb. Kew.

This is most likely an introduced plant in Mexico and other parts of America. It is indigenous in the south of Europe.

55. **Euphorbia leucantha,** Boiss. in DC. Prodr. xv. 2, p. 42.

Anisophyllum leucanthum, Kl. et Garcke, Tricocc. p. 27.

Mexico (*Ehrenberg*). Hb. Kew.

56. **Euphorbia ligustrina,** Boiss. Cent. Euphorb. p. 22, et in DC. Prodr. xv. 2, p. 61, et Ic. Euphorb. t. 39.

New Spain (hb. *Pavon*).

57. **Euphorbia macropus,** Boiss. in DC. Prodr. xv. 2, p. 52, et Ic. Euphorb. t. 26.

Anisophyllum macropus et *A. crassipes,* Kl. et Garcke, Tricocc. pp. 33 et 38.

South Mexico, Real del Monte and Cerro Vento (*Ehrenberg*).

58. **Euphorbia maculata,** Linn. Sp. Pl. i. n. 21, nec Linn. Mant., ex Boiss. in DC. Prodr. xv. 2, p. 46; Jacq. Hort. Vindob. t. 186.

Canada to Florida and Texas.—North Mexico, Sonora Alta (*Coulter*, 1449); South Mexico, Orizaba (*Botteri*, 596). Hb. Kew.

59. **Euphorbia melanadenia,** Torr. in Pacif. Railr. Rep. iv. p. 135; DC. Prodr. xv. 2, p. 31.

California.

β. **subinappendiculata,** Engelm., ex Boiss. in DC. Prodr. xv. 2, p. 32.

Euphorbia cinerascens, Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 186.

New Mexico.—North Mexico, Chihuahua and Sonora (*Thurber*), near Monterey (*Gregg*). Hb Kew.

60. **Euphorbia mendezii,** Boiss. Cent. Euphorb. p. 15, et in DC. Prodr. xv. 2, p. 41.

South Mexico, Leon, near Guanajuato (*Mendez*), Orizaba (*Botteri*, 1857).

61. **Euphorbia montana,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 192; DC. Prodr. xv. 2, p. 148.

Rocky Mountains southward.—North Mexico, San Luis Mountains, Sonora (*Smith*). Hb. Kew.

62. **Euphorbia multicaulis,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 191; DC. Prodr. xv. 2, p. 135.

Euphorbia dictyosperma, var. *mexicana,* Engelm. loc. cit.

New Mexico.—North Mexico, Sonora (*Thurber*).

63. **Euphorbia multiseta,** Benth.. Pl. Hartw. p. 51; DC. Prodr. xv. 2, p. 57; Boiss. Ic. Euphorb. t. 36.

South Mexico, Morelia (*Hartweg*). Hb. Kew.

64. **Euphorbia ocymoidea,** Linn. Amœn. Acad. iii. p. 112; DC. Prodr. xv. 2, p. 57.

Euphorbia fimbrilligera, Mart. Del. Sem. Hort. Monac. 1845, et Linnæa, xix. p. 407.

Leptopus ocymoides, Kl. et Garcke, Tricocc. p. 45.

South Mexico, region of Orizaba (*Botteri*, 580; *Müller*, 1204), Mirador (*Linden*, 796), Jalapa (*Schiede*); Guatemala, Baño de los Padres (*Bernoulli*, 121).—Venezuela. Hb. Kew.

65. **Euphorbia œrstediana,** Boiss. in DC. Prodr. xv. 2, p. 59.

Poinsettia œrstediana, Kl. et Garcke, Tricocc. p. 103.

Guatemala (*Friedrichsthal*); Costa Rica, Naranjo (*Œrsted*).

66. **Euphorbia orizabæ,** Boiss. in DC. Prodr. xv. 2, p. 147.

South Mexico, peak of Orizaba, 8000 to 10,000 feet (*Galeotti*, 3737; *Linden*, 791). Hb. Kew.

67. **Euphorbia pediculifera,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 186; DC. Prodr. xv. 2, p. 48.

North Mexico, Sonora (*Wright*, 1848; *Schott*). Hb. Kew.

68. **Euphorbia peganoides,** Boiss. Cent. Euphorb. p. 22, et Ic. Euphorb. t. 40, et in DC. Prodr. xv. 2, p. 62.

New Spain (hb. *Pavon*).

69. **Euphorbia physalifolia,** Boiss. Cent. Euphorb. p. 19, et Ic. Euphorb. t. 34, et in DC. Prodr. xv. 2, p. 56.

New Spain (hb. *Pavon*).

70. **Euphorbia pilosula,** Engelm.; DC. Prodr. xv. 2, p. 39.

Mexico, Tiristiran (*Gregg*, 792). Hb. Kew.

71. **Euphorbia pilulifera,** Linn. Amœn. Acad. iii. p. 114; DC. Prodr. xv. 2, p. 21; Jacq. Ic. Pl. Rar. iii. t. 478.

Euphorbia globulifera, H. B. K. Nov. Gen. et Sp. ii. p. 56.

Florida to Texas and New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 809); South Mexico, region of Orizaba (*Botteri*, 597), valley of Cordova (*Bourgeau*, 1680); Guatemala, Mazatenango (*Bernoulli*, 87, 80); Nicaragua, Greytown (*Tate*, 355); Costa Rica (*Endres*); Panama, Chagres (*Fendler*, 274).—Common in Tropical and Subtropical South America and the West Indies; also widely dispersed in the warm regions of the Old World. Hb. Kew.

β. **procumbens,** Boiss. in DC. Prodr. xv. 2, p. 21; DC. Cat. Hort. Monsp. p. 111 (species).

Euphorbia gemella, Lag. Nov. Gen. et Sp. p. 17.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 815); South Mexico, Oaxaca (*Botteri*, 596; *Sumichrast*).—Southward to Brazil and in the West Indies. Hb. Kew.

72. **Euphorbia podadenia,** Boiss. in DC. Prodr. xv. 2, p. 40.

South Mexico, valley of Mexico (ex *Boissier*).

73. **Euphorbia polycarpa,** Benth. Bot. Voy. 'Sulphur,' p. 50; DC. Prodr. xv. 2, p. 44.

California.—North Mexico, Sonora Alta (*Coulter*, 1448), banks of the Gila (*Emory*). Hb. Kew.

74. **Euphorbia preslii,** Guss. Fl. Sic. Prodr. i. p. 539; DC. Prodr. xv. 2, p. 23.
CANADA to TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 814), Chihuahua (*Potts*); SOUTH MEXICO, Orizaba (*Botteri*, 590, 591), valley of Mexico (*Bourgeau*, 185), Zacatecas (*Hartweg*).—ECUADOR. Hb. Kew.

β. **glaberrima,** Boiss. in DC. Prodr. xv. 2, p. 23.
SOUTH MEXICO, near Jalapa, and on the Rio Blanco (*Karwinski*).
This species occurs as an introduced plant in Sicily and elsewhere in the Old World.

75. **Euphorbia prostrata,** Ait. Hort. Kew. ii. p. 139; DC. Prodr. xv. 2, p. 47; Boiss. Ic. Euphorb. t. 17.
Euphorbia callitrichoides et *E. tenella,* H. B. K. Nov. Gen. et Sp. ii. pp. 52, 53.
Euphorbia trichogona, Bertol. Misc. Bot. iii. p. 20, t. 6. fig. 3.
Euphorbia perforata, Guss. Fl. Sic. Prodr. i. p. 540.
LOUISIANA to TEXAS.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 818); SOUTH MEXICO, Jalapa (*Coulter*, 1446), without locality (*Karwinski*); GUATEMALA (*Bernoulli*).—And widely dispersed in SOUTH AMERICA and the WEST INDIES; also in Tropical AFRICA, BOURBON and MAURITIUS. Hb. Kew.
Naturalized in Sicily and elsewhere.

76. **Euphorbia pulcherrima,** Willd., ex Boiss. in DC. Prodr. xv. 2, p. 71.
Euphorbia erythrophylla, Bertol. Fl. Guat. p. 19, t. 6.
Poinsettia pulcherrima, Grah. Edinb. Phil. Journ. 1836; Bot. Mag. t. 3493.
NORTH MEXICO, Sierra Madre (*Seemann*); SOUTH MEXICO, Papantla (*Schiede*), valley of Cordova (*Bourgeau*, 1674); GUATEMALA (*Friedrichsthal*); COSTA RICA (*Œrsted*). Hb. Kew.

77. **Euphorbia pycnanthema,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 188; DC. Prodr. xv. 2, p. 22.
NORTH MEXICO, Lake Santa Maria, Chihuahua (*Wright*). Hb. Kew.

78. **Euphorbia radians,** Benth. Pl. Hartw. pp. 8 et 20; DC. Prodr. xv. 2, p. 74.
Poinsettia radians, Kl. et Garcke, Tricocc. p. 104.
SOUTH MEXICO, Guanajuato (*Hartweg*), Oaxaca (*Galeotti*, 3750). Hb. Kew.

79. **Euphorbia radioloides,** Boiss. in DC. Prodr. xv. 2, p. 45.
NORTH MEXICO, Cerro de Pinal (*Seemann*, 1522). Hb. Kew.

80. **Euphorbia restiacea,** Benth. Bot. Voy. 'Sulphur,' p. 162; DC. Prodr. xv. 2, p. 74.
SOUTH MEXICO, between San Blas and Tepic (*Sinclair*). Hb. Kew.

81. **Euphorbia revoluta,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 186; DC. Prodr. xv. 2, p. 46; Boiss. Ic. Euphorb. t. 13.
NEW MEXICO.—NORTH MEXICO, valley of the Rio Grande (*Wright*). Hb. Kew.

82. **Euphorbia saccharata,** Boiss. Cent. Euphorb. p. 18, et in DC. Prodr. xv. 2, p. 62.

Adenopetalum ellipticum, Kl. et Garcke, Tricocc. p. 50.

MEXICO (*Ehrenberg*); NEW SPAIN (hb. *Pavon*).

83. **Euphorbia scabrella,** Boiss. in DC. Prodr. xv. 2, p. 55, et Ic. Euphorb. t. 32.

Euphorbia graminea, Schl. et Cham. in Linnæa, v. p. 83, non Jacq.
Eumecanthus triphyllus, Kl. et Garcke, Tricocc. p. 43.
Adenopetalum bracteatum, Kl. et Garcke, Tricocc. p. 48.

SOUTH MEXICO, without locality (*Schiede & Deppe*), Oaxaca (*Franco*), Jalapa (*Linden*, 781), Huajutla (*Karwinski*); NICARAGUA, Xinotega, Segovia (*Ærsted*).

84. **Euphorbia scandens,** H. B. K. Nov. Gen. et Sp. ii. p. 58; DC. Prodr. xv. 2, p. 63.

SOUTH MEXICO, near Mazatlan (*Humboldt & Bonpland*).

85. **Euphorbia schlechtendalii,** Boiss. Cent. Euphorb. p. 18, et in DC. Prodr. xv. 2, p. 60.

Alecteroctonum ovatum, Schl. in Linnæa, xix. p. 252.

SOUTH MEXICO, near Actopan and Papantla (*Schiede & Deppe*), Los Baños, Vera Cruz (*Heller*).

86. **Euphorbia scotana,** Boiss. in DC. Prodr. xv. 2, p. 60.

Alecteroctonum scotanum, Schl. in Linnæa, xix. p. 252.

SOUTH MEXICO, ravines at 3000 feet in the Cordillera of Oaxaca (*Galeotti*, 3780). Hb. Kew.

87. **Euphorbia segoviensis,** Boiss. in DC. Prodr. xv. 2, p. 58.

Leptopus segoviensis, Kl. et Garcke, Tricocc. p. 46.

SOUTH MEXICO, between Tehuantepec and Boca del Monte, Oaxaca (*Andrieux*, 105); NICARAGUA, Segovia (*Ærsted*). Hb. Kew.

88. **Euphorbia serpens,** H. B. K. Nov. Gen. et Sp. ii. p. 52; DC. Prodr. xv. 2, p. 29.

NEBRASKA to TEXAS.—NORTH MEXICO, San Lorenzo de Laguna and Parras (*Palmer*, 1192, 1193), region of San Luis Potosi, at 6000 to 8000 feet (*Parry & Palmer*, 820), Sierra Madre (*Seemann*, 2159); SOUTH MEXICO (*Karwinski*); PANAMA, Chagres (*Fendler*, 278). Hb. Kew.

β. **radicans,** Engelm.; DC. Prodr. xv. 2, p. 30.

TEXAS.—MEXICO, Tampico (*Berlandier*).

A variety of this species is common in India and extends to Java.

89. **Euphorbia sphærorrhiza,** Benth. Fl. Hartw. p. 8; DC. Prodr. xv. 2, p. 68; Hook. Ic. Pl. t. 346.

Tithymalopsis sphærorrhiza, Kl. et Garcke, Tricocc. p. 44.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 807); South Mexico, Lagos (*Hartweg*, 36). Hb. Kew.

90. **Euphorbia stictospora,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 187; DC. Prodr. xv. 2, p. 41.

Anisophyllum senile, Kl. et Garcke, Tricocc. p. 28.

Kansas; Texas; New Mexico.—North Mexico, Chihuahua (*Thurber*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 811); South Mexico, near Tacubaya (*Bourgeau*, 186, in part). Hb. Kew.

91. **Euphorbia strigosa,** Hook. et Arn. Bot. Beech. Voy. p. 310; DC. Prodr. xv. 2, p. 73.

Euphorbia pedunculata, Kl. in Seem. Bot. Voy. 'Herald,' p. 277.

Poinsettia pedunculata, Kl. et Garcke, Tricocc. p. 102.

North Mexico, Sierra Madre (*Seemann*, 2162); South Mexico, Zacuapan (*Linden*, 795), Tepic (*Barclay*). Hb. Kew.

92. **Euphorbia thymifolia,** Burm. Fl. Ind. p. 2; DC. Prodr. xv. 2, p. 47.

North Mexico, Chihuahua (*Potts*); South Mexico, Vera Cruz to Orizaba (*Müller*, 1156); Nicaragua, Greytown (*Tate*).—This species is widely dispersed in Tropical America, Africa, and Asia. Hb. Kew.

93. **Euphorbia tomentella,** Engelm.; DC. Prodr. xv. 2, p. 32.

North Mexico, San Luis Potosi (*Berlandier*).

94. **Euphorbia torrida,** DC. in Atti Sc. Ital. in Tor. p. 157; DC. Prodr. xv. 2, p. 63.

Euphorbia marginata, H. B. K. Nov. Gen. et Sp. ii. p. 61.

Euphorbia bonplandii, Sweet, Hort. Brit. ed. 3, p. 600.

Dichrophyllum marginatum, Kl. et Garcke, Tricocc. p. 44.

South Mexico, Vera Cruz (*Humboldt & Bonpland*), La Antigua, Vera Cruz (*Galeotti*, 3765; *Linden*, 783). Hb. Kew.

95. **Euphorbia trachysperma,** Engelm. in Torr. Bot. U.S. & Mex. Bound. Surv. p. 189; DC. Prodr. xv. 2, p. 33.

North Mexico, San Pedro, Sonora (*Wright*, 1832). Hb. Kew.

96. **Euphorbia umbellulata,** Engelm.; DC. Prodr. xv. 2, p. 40.

South Mexico, Guadalajara (*Gregg*, 856), without locality (*Parkinson*). Hb. Kew.

97. **Euphorbia velleriflora,** Boiss. in DC. Prodr. xv. 2, p. 40.

Anisophyllum velleriflorum, Kl. et Garcke, Tricocc. p. 28.

South Mexico, near Los Baños (*Ehrenberg*), near Hacienda del Limon (*Karwinski*).

98. **Euphorbia velligera,** Schauer in Linnæa, xx. p. 728; DC. Prodr. xv. 2, p. 40.

Anisophyllum tenuiflorum, Kl. et Garcke, Tricocc. p. 26.

South Mexico, Bustamante (*Ehrenberg*), without locality (*Aschenborn*).

99. **Euphorbia vestita,** Boiss. Cent. Euphorb. p. 7, et in DC. Prodr. xv. 2, p. 26.

Mexico (hb. *Pavon*).

100. **Euphorbia villifera,** Scheele in Linnæa, xxii. p. 153; DC. Prodr. xv. 2, p. 45.

Texas.—North Mexico, various localities (*Gregg*). Hb. Kew.

101. **Euphorbia xalapensis,** H. B. K. Nov. Gen. et Sp. ii. p. 61; DC. Prodr. xv. 2, p. 53; Boiss. Ic. Euphorb. t. 31.

Poinsettia xalapensis, Kl. et Garcke, Tricocc. p. 103.

South Mexico, near Jalapa (*Humboldt & Bonpland*; *Schiede*), Orizaba (*Botteri*, 585). Hb. Kew.

102. **Euphorbia zierioides,** Boiss. in DC. Prodr. xv. 2, p. 58.

South Mexico, Cordillera of Oaxaca at 7000 feet (*Galeotti*, 3741). Hb. Kew.

3. SIMMONDSIA.

Simmondsia, Nutt. in Hook. Lond. Journ. Bot. iii. p. 400; Benth. et Hook. Gen. Plant. iii. p. 265.

A shrubby monotype.

1. **Simmondsia californica,** Nutt. in Hook. Lond. Journ. Bot. iii. p. 400, t. 16; DC. Prodr. xvi. 1, p. 22; Torr. Bot. U.S. & Mex. Bound. Surv. p. 202, t. 49; Wats. Bot. Calif. ii. p. 67.

Southern California to Arizona.—North Mexico, along the Gila (ex *Torrey*).

4. PHYLLANTHUS.

Phyllanthus, Linn. Gen. Plant. n. 1050; Benth. et Hook. Gen. Plant. iii. p. 272.

Herbs, shrubs, or trees, generally spread in warm regions, rarer in temperate; absent from Europe and Asiatic Russia; very few in North America, and few in South Africa and extratropical Australia. Nearly 450 species are enumerated.

1. **Phyllanthus acuminatus,** Vahl, Symb. p. 95; DC. Prodr. xv. 2, p. 381.

Phyllanthus lycioides, P. ruscoides, et *P. mucronatus,* H. B. K. Nov. Gen. et Sp. ii. pp. 112, 113.

South Mexico, Yucatan (*Linden*, 737), between Vera Cruz and Santa Fé (*Schiede*); Guatemala, Mazatenango (*Bernoulli*, 580); Costa Rica (*Hoffmann*); Panama (*S. Hayes*, 17).—Colombia to Peru and Guiana, and in the West Indies. Hb. Kew.

2. **Phyllanthus adenodiscus,** Müll. Arg. in Linnæa, xxxii. p. 23, et in DC. Prodr. xv. 2, p. 374.

Phyllanthus glaucescens, Cham. et Schl. in Linnæa, vi. p. 364, non H. B. K.

South Mexico, Papantla (*Schiede & Deppe*), Chiapas (*Ghiesbreght*, 513). Hb. Kew.

3. **Phyllanthus caroliniensis,** Walt. Fl. Carolin. p. 228; DC. Prodr. xv. 2, p. 399.

Pennsylvania to Alabama and Texas.—Mexico, Orizaba (*Botteri*, 579), Mirador (*Linden*, 1355); Costa Rica (*Œrsted*); Panama (*S. Hayes*, 716).—Venezuela; Colombia; Galapagos; West Indies. Hb. Kew.

Botteri's 579 is referred by Müller (DC. Prodr. xv. 2, p. 390) to *P. compressus*.

4. **Phyllanthus chlorophæus,** Baill. Adansonia, i. p. 27; DC. Prodr. xv. 2, p. 403.

South Mexico, Sierra San Pedro Nolasco (*Jurgensen*, 858).

5. **Phyllanthus compressus,** H. B. K. Nov. Gen. et Sp. ii. p. 109; DC. Prodr. xv. 2, p. 390.

South Mexico, between Antigua and Vera Cruz (*Humboldt & Bonpland*), Orizaba (*Botteri*, 579).—Peru. Hb. Kew.

6. **Phyllanthus diffusus,** Kl. in Seem. Bot. Voy. 'Herald,' p. 105; DC. Prodr. xv. 2, p. 409.

Phyllanthus hoffmannseggii, Müll. Arg. in Linnæa, xxxii. p. 45.

α. **genuinus,** Müll. Arg. DC. Prodr. xv. 2, p. 409.

Panama, near the city of Panama (*Seemann*, 198).—West Indies to Brazil. Hb. Kew.

7. **Phyllanthus ericoides,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 193; DC. Prodr. xv. 2, p. 433.

North Mexico, Chihuahua (*Parry*).

8. **Phyllanthus galeottianus,** Baill. Adansonia, i. p. 32; DC. Prodr. xv. 2, p. 357.

South Mexico, Morelia, at 3600 feet (*Galeotti*, 7215). Hb. Kew.

9. **Phyllanthus glaucescens,** H. B. K. Nov. Gen. et Sp. ii. p. 115; DC. Prodr. xv. 2, p. 374.

South Mexico, Campeachy (*Humboldt & Bonpland*).

10. **Phyllanthus grandifolius,** Linn. Sp. Pl. ed. 1, p. 981.

γ. **genuinus,** Müll. Arg. in DC. Prodr. xv. 2, p. 319.

Mexico (ex *Baillon*).—West Indies to Brazil.

11. **Phyllanthus lathyroides,** H. B. K. Nov. Gen. et Sp. ii. p. 110.

α. **commutatus,** Müll. Arg. in DC. Prodr. xv. 2, p. 403.

Phyllanthus niruri, Cham. et Schl. in Linnæa, v. p. 87 (non Linn.).

Texas.—South Mexico, near Jalapa (*Schiede & Deppe*), Zacuapan (*Liebmann*), Orizaba (*Botteri*, 578); Costa Rica (*Hoffmann*).—Venezuela to Brazil. Hb. Kew.

β. **genuinus,** Müll. Arg. in DC. Prodr. xv. 2, p. 404.

South Mexico, Orizaba (*Sumichrast & Botteri*, 578, in part).—Venezuela to Peru and Brazil, and in the West Indies. Hb. Kew.

12. **Phyllanthus laxiflorus,** Benth. Pl. Hartw. p. 90; DC. Prodr. xv. 2, p. 375.

South Mexico, Chiapas (*Linden*, 1634); Guatemala, mountains of Pinula (*Hartweg*). Hb. Kew.

13. **Phyllanthus liebmannianus,** Müll. Arg. in DC. Prodr. xv. 2, p. 366.

South Mexico, Consoquitla, La Isleta near Vera Cruz, and near Mirador (*Liebmann*).

14. **Phyllanthus moçinianus,** Baill. Adansonia, i. p. 35; DC. Prodr. xv. 2, p. 382.

Mexico (*Moçino & Sessé*).

15. **Phyllanthus neurocarpus,** Müll. Arg. in Linnæa, xxxiv. p. 69, et in DC. Prodr. xv. 2, p. 331.

Mexico, between Victoria and Tula (*Berlandier*), San Luis Potosi (*Virlet d'Aoust*).

16. **Phyllanthus niruri,** Linn. Sp. Pl. p. 1392; Müll. Arg. in DC. Prodr. xv. 2, p. 406 (varietates).

A common species in the warmer parts of America, including Mexico and Central America; also in Tropical Africa and Asia. Hb. Kew.

17. **Phyllanthus pavonianus,** Baill. Adansonia, i. p. 30; DC. Prodr. xv. 2, p. 380.

Phyllanthus oxycladus, Müll. Arg. in Linnæa, xxxii. p. 26.

Mexico?; Peru?

In Kew herbarium there is a specimen from Chiapas (*Ghiesbreght*, 820) bearing this name.

18. **Phyllanthus polygonoides,** Spreng. Syst. Veg. iii. p. 23; DC. Prodr. xv. 2, p. 366

Texas; New Mexico.—North Mexico, region of San Luis Potosi (*Virlet d'Aoust*).

5. FORCHAMMERIA.

Forchammeria, Liebm. in Vidensk. Meddel. 1853, p. 93; Benth. et Hook. Gen. Plant. iii. p. 278.

An arboreous monotype.

1. **Forchammeria pallida,** Liebm. in Vidensk. Meddel. 1853, p. 93.

South Mexico, Tehuantepec (*Liebmann*). Hb. Kew.

6. HIERONYMA.

Hieronyma, Allem. Diss. Rio Janeiro, 1848, cum ic.; Benth. et Hook. Gen. Plant. iii. p. 284.
Stilaginella, Tul. in Ann. Sc. Nat. série 3, xv. p. 240.

A genus of about eight or ten arboreous and shrubby species, restricted to Tropical America.

1. **Hieronyma alchorneoides,** Allem. Diss. Rio Janeiro, 1848, cum ic.; DC. Prodr. xv. p. 271.

Euphorbiacearum genus novum, Kl. in Seem. Bot. Voy. 'Herald,' p. 106.

Panama, Tolé, Veraguas (*Seemann*, 1213).—Brazil. Hb. Kew.

2. **Hieronyma oblonga,** Müll. Arg. in Linnæa, xxxiv. p. 66, et in DC. Prodr. xv. 2, p. 271.

β. **benthami,** Müll. Arg. loc. cit.

Stilaginella benthami, Tul. in Ann. Sc. Nat. série 3, xv. p. 247.

South Mexico, San Pedro Tepinapa, in the mountains of Chinantla (*Hartweg*, 513; *Liebmann*). Hb. Kew.

The forms α, γ, and δ inhabit Guiana and Brazil.

7. TETRORCHIDIUM.

Tetrorchidium, Pœpp. et Endl. Nov. Gen. et Sp. iii. p. 23; Benth. et Hook. Gen. Plant. iii. p. 288.

A Tropical-American genus of four shrubby and arboreous species.

1. **Tetrorchidium rubrivenium,** Pœpp. et Endl. Nov. Gen. et Sp. iii. p. 23, t. 227; Müll. Arg. in DC. Prodr. xv. 2, p. 1133 (varietates 4).

γ. **integrifolium,** Müll. Arg. loc. cit.

Costa Rica, Aguacate (*Œrsted*).

The other varieties are spread from Venezuela to Peru and Brazil.

8. JATROPHA.

Jatropha, Linn. Gen. Plant. n. 1084; Benth. et Hook. Gen. Plant. iii. p. 290.

Tall herbs, shrubs, or rarely arboreous. Nearly seventy species are enumerated; and they are spread over Tropical Asia, Africa, and America, though most numerous in the last country. A few occur without the tropics in South Africa and North America.

1. **Jatropha aconitifolia,** Mill. Dict. n. 6; Müll. in DC. Prodr. xv. 2, p. 1100

α. **palmata,** Müll. Arg. loc. cit.

VENEZUELA.

β. **genuina,** Müll. Arg. loc. cit.

SOUTH MEXICO, near Vera Cruz (*Virlet d'Aoust*), near Mirador and Consoquitl (*Liebmann*); COSTA RICA, Puntarenas (*Œrsted*).

γ. **multipartita,** Müll. Arg. loc. cit.

SOUTH MEXICO, region of Orizaba (*Müller*, 4125).

2. **Jatropha alamani,** Müll. Arg. in Linnæa, xxxiv. p. 207, et in DC. Prodr. xv. 2, p. 1077.

SOUTH MEXICO, near Tehuantepec (*Alaman*).

3. **Jatropha andrieuxii,** Müll. Arg. in Linnæa, xxxiv. p. 208, et in DC. Prodr. xv. 2, p. 1082.

SOUTH MEXICO, between Chila and Huahuapan (*Andrieux*, 114). Hb. Kew.

4. **Jatropha angustidens,** Müll. Arg. in DC. Prodr. xv. 2, p. 1102.

Cnidoscolus angustidens, Torr. Bot. U.S. & Mex. Bound. Surv. p. 198.

NORTH MEXICO, Santa Cruz, Sonora (*Schott; Thurber; Wright*, 1809). Hb. Kew.

5. **Jatropha berlandieri,** Torr. in. U.S. & Mex. Bound. Surv. p. 198; DC. Prodr. xv. 2, p. 1090.

TEXAS; NEW MEXICO.—NORTH MEXICO, Monterey, Nuevo Leon (*Edwards*); Matamoros (*Berlandier*). Hb. Kew.

6. **Jatropha canescens,** Müll. Arg. in DC. Prodr, xv. 2, p. 1079.

Mozinna canescens, Benth. Bot. Voy. 'Sulphur,' p. 52, t. 25; Torr. Bot. U.S. & Mex. Bound. Surv. p. 198.

LOWER CALIFORNIA.—NORTH MEXICO, Sonora (*Schott*).

7. **Jatropha cardiophylla,** Müll. Arg. in DC. Prodr. xv. 2, p. 1079.

Mozinna cardiophylla, Torr. in Bot. U.S. & Mex. Bound. Surv. p. 198.

ARIZONA.—NORTH MEXICO, near Tucson and in Sierra Verde, Sonora (*Schott*)..

8. **Jatropha cinerea,** Müll. Arg. in DC. Prodr. xv. 2, p. 1078.

Mozinna cinerea, Ort. Dec. p. 108.

MEXICO (*Sessé*).

9. **Jatropha cordata,** Müll. Arg. in. DC. Prodr. 2, p. 1078.

Mozinna cordata, Ort. Dec. p. 107.

Loureira glandulosa, Cav. Ic. Pl. v. p. 18, t. 430.

MEXICO (*Sessé*).

10. **Jatropha curcas,** Linn. Sp. Pl. ed. 1, p. 1006; DC. Prodr. xv. 2, p. 1080; Jacq. Hort. Vindob. iii. t. 63.

Castigliona lobata, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 139, t. 37.

South Mexico, Gonacatepec (*Andrieux*, 113), La Antigua, Vera Cruz (*Galeotti*, 7105), near Orizaba (*Liebmann*).—Widely diffused in Tropical America; also in Africa and Asia. Hb. Kew.

11. **Jatropha gossypiifolia,** Linn. Sp. Pl. ed. 1, p. 1006.

α. **staphysagriæfolia,** Müll. Arg. in DC. Prodr. xv. 2, p. 1086; Bot. Reg. t. 746.

West Indies and Tropical South America.

β. **elegans,** Müll. Arg. loc. cit.; Kl. in Seem. Bot. Voy. 'Herald,' p. 102 (species).

Adenoropium elegans et *A. gossypiifolium,* Pohl, Pl. Bras. Ic. et Descr. i. pp. 15 et 16.

South Mexico, Vera Cruz to Orizaba (*Müller*, 43), Vera Cruz (*Virlet d'Aoust*), without locality (*Coulter*, 1468); Nicaragua, Greytown (*Tate*, 2); Panama, near Santiago and Panama (*Seemann*, 619).—Venezuela; Guiana; Brazil; West Indies; also in West Africa. Hb. Kew.

12. **Jatropha hernandiæfolia,** Vent. Hort. Malm. p. 52, adnot.; DC. Prodr. xv. 2, p. 1077.

New Spain (*Sessé*).—Portorico.

13. **Jatropha kunthiana,** Müll. Arg. in Linnæa, xxxiv. p. 211, et in DC. Prodr. xv. 2, p. 1199.

Jatropha urens, H. B. K. Nov. Gen. et Sp. ii. p. 106.

South Mexico, Orizaba (*Botteri*), near Mirador (*Liebmann*).—Colombia to Guiana.

14. **Jatropha liebmanni,** Müll. Arg. in Linnæa. xxxiv. p. 212, et in DC. Prodr. xv. 2, p. 1102.

South Mexico, near Tehuacan, Rancho Nuevo &c., Vera Cruz (*Liebmann*).

15. **Jatropha macrorhiza,** Benth. Pl. Hartw. p. 8; DC. Prodr. xv. 2, p. 1087.

South Mexico, Aguas Calientes (*Hartweg*), Zacatecas (*Coulter*, 1469). Hb. Kew.

16. **Jatropha multifida,** Linn. Sp. Pl. ed. 1, p. 1006; DC. Prodr. xv. 2, p. 1089

Mexico (hb. *Pavon*); Panama (*Seemann*, 583).—Colombia to Brazil, and in the West Indies. Hb. Kew.

This species is also wild in Tropical Africa and Asia, though probably originally from America.

17. **Jatropha olivacea,** Müll. Arg. in Linnæa, xxxiv. p. 207, et in DC. Prodr xv. 2, p. 1078.

South Mexico, San Juan del Estado (*Liebmann*).

18. **Jatropha platyphylla,** Müll. Arg. in DC. Prodr. xv. 2, p. 1077.

Mexico (hb. *Pavon*).

19. **Jatropha podagrica,** Hook. Bot. Mag. t. 4376; DC. Prodr. xv. 2, p. 1093; Seem. Bot. Voy. 'Herald,' p. 102.

Nicaragua, near Granada (*Friedrichsthal; Lévy*, 105); Salvador, Sonsonaté (*Dorat*); Costa Rica (*Hoffmann*).—Colombia. Hb. Kew.

20. **Jatropha pseudocurcas,** Müll. Arg. in Linnæa, xxxiv. p. 208, et in DC. Prodr. xv. 2, p. 1080.

South Mexico, near Oaxaca (*Liebmann*).

21. **Jatropha rotundifolia,** Müll. Arg. in Linnæa, xxxiv. p. 211, et in DC. Prodr. xv. 2, p. 1099.

North Mexico, region of San Luis Potosi (*Virlet d'Aoust*).

22. **Jatropha spatulata,** Müll. Arg. in DC. Prodr. xv. 2, p. 1081.

α. **genuina,** Müll. Arg. loc. cit.

Mozinna spathulata, Ort. Dec. p. 105, t. 13.
Loureira cuneifolia, Cav. Ic. Pl. v. p. 17, t. 429.
Curcas cuneifolia, Baill. Etud. Gén. Euphorb. p. 315.

Mexico.

β. **sessiliflora,** Müll. Arg. loc. cit. p. 1082.

Mozinna spathulata β. *sessiliflora,* Hook. Ic. Pl. t. 357; Torr. Bot. U.S. & Mex. Bound. Surv. p. 197.

Texas.—North Mexico, Chihuahua and Coahuila (*Gregg*), region of San Luis Potosi (*Parry & Palmer*, 830; *Schaffner*), Monterey (*Eaton & Edwards*), Matamoros (*Berlandier*); South Mexico, Guanajuato (*Hartweg*), ruins of Mitla, at 6000 feet (*Galeotti*, 4005). Hb. Kew.

Some of the specimens referred here may be α. *genuina*.

23. **Jatropha tubulosa,** Müll. Arg. in Linnæa, xxxiv. p. 212, et in DC. Prodr. xv. 2, p. 1102.

α. **septemloba,** Müll. Arg. loc. cit.

Mexico (*Sessé*).

β. **quinqueloba,** Müll. Arg. loc. cit.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 599), near Puebla (*Andrieux*, 111). Hb. Kew.

γ. **triloba,** Müll. Arg. loc. cit. p. 1103.

Peru.

24. **Jatropha urens,** Linn. Sp. Pl. ed. 1, p. 1007.

α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 1100; Jacq. Hort. Vindob. i. p. 8, t. 21.

South Mexico, Hacienda de Santa Cruz, near Tehuantepec (*Liebmann*), Orizaba

(*Müller*, 25), valley of Cordova (*Bourgeau*, 2231); NICARAGUA, neighbourhood of Granada (*Lévy*, 26).—VENEZUELA; GUIANA; BRAZIL; WEST INDIES. Hb. Kew.

β. **marcgravii,** Müll. Arg. loc. cit. p. 1101.

BRAZIL.

γ. **herbacea,** Müll. Arg. loc. cit.; Linn. Sp. Pl. ed. 1, p. 1007 (species).

Cnidoscolus michauxii, Cham. et Schl. in Linnæa, v. p. 87, non Pohl.

Jussieua herbacea, Houst. Reliq. p. 6, t. 5, excl. fig. 5.

SOUTH MEXICO, near Vera Cruz (*Schiede & Deppe*; *Müller*, 25), near Tampico (*Berlandier*), Laguna Verde (*Liebmann*).

δ. **stimulosa,** Müll. Arg. loc. cit.

CAROLINA to FLORIDA.

9. GARCIA.

Garcia, Rohr in Skrivt. Nat. Hist. Selsk. Kjöbenh. ii. p. 217, t. 9; Benth. et Hook. Gen. Plant. iii. p. 292.

An arboreous monotype.

1. **Garcia nutans,** Rohr in Skrivt. Nat. Hist. Selsk. Kjöbenh. ii. p. 217, t. 9; DC. Prodr. xv. 2, p. 721; Adr. Juss. Tent. Euphorb. p. 41, t. 13. fig. 40; Baill. Etud. Gén. Euphorb. t. 14.

SOUTH MEXICO, near Tantoyuca (*Ervendberg*, 273).—VENEZUELA; COLOMBIA. Hb. Kew.

10. CROTON.

Croton, Linn. Gen. Plant. n. 1083; Benth. et Hook. Gen. Plant. iii. p. 293.

Trees, shrubs, or rarely herbs. About 500 species have been published; and they are widely dispersed in the tropics, extending into extratropical regions both in North and South America. The genus is unrepresented in Europe and Extratropical Asia.

1. **Croton adspersus,** Benth. Pl. Hartw. p. 51; DC. Prodr. xv. 2, p. 660.

SOUTH MEXICO, Morelia (*Hartweg*, 389), Cordillera of Oaxaca (*Galeotti*, 3753). Hb. Kew.

2. **Croton axillaris,** Müll. Arg. in Linnæa, xxxiv. p. 126, et in DC. Prodr. xv. 2, p. 627.

NICARAGUA, near Granada (*Œrsted*).

3. **Croton billbergianus,** Müll. Arg. in Linnæa, xxxiv. p. 98, et in DC. Prodr. xv. 2, p. 582.

GUATEMALA (*Friedrichsthal*); PANAMA, Portobello (*Billberg*), Paraiso (*S. Hayes*, 118). Hb. Kew.

4. **Croton berlandieri,** Müll. Arg. in DC. Prodr. xv. 2, p. 688, non. Torr.

NORTH MEXICO, around Matamoros (*Berlandier*, 2282). Hb. Kew.

5. **Croton capitatus,** Michx. Fl. Bor.-Am. ii. p. 214.

α. **lindheimeri,** Müll. Arg. in DC. Prodr. xv. 2, p. 687; Engelm. et A. Gr. Pl. Lindh. p. 24, sub *Pilinophyto.*

Louisiana; Texas.

β. **genuinus,** Müll. Arg. loc. cit.

Pilinophytum capitatum, Kl. in Erichs. Archiv, 1841, p. 214.

Kentucky and Illinois to Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 829½). Hb. Kew.

6. **Croton chamædryfolius,** Griseb. Fl. Brit. W. Ind. p. 41, excl. syn., non Lam., qui *Acalyphæ spec.*, ex Müll. Arg. in DC. Prodr. xv. 2, p. 686.

Geiseleria chamædryfolia, Kl. in Hook. Lond. Journ. Bot. ii. p. 47, excl. syn.; Miq. Stirp. Surinam. p. 98, t. 30.

Nicaragua (*Tate*, 351); Panama (*S. Hayes*, 207; *Seemann*, 190).—Venezuela; Colombia; Guiana; Brazil; Trinidad. Hb. Kew.

7. **Croton ciliato-glandulosus,** Ort. Dec. p. 15; DC. Prodr. xv. 2, p. 643.

Croton penicillatus, Vent. Choix, p. 12, t. 12; H. B. K. Nov. Gen. et Sp. ii. p. 84; Cham. et Schl. in Linnæa, vi. p. 361.

South Mexico, region of Oaxaca (*Andrieux*, 108; *Galeotti*, 3749; *Hartweg*, 511; *Liebmann*), Vera Cruz (*Galeotti*, 3729), Zimapan (*Coulter*, 1510), Tampico (*Palmer*, 1138; *Berlandier*, 2172).—Cuba. Hb. Kew.

8. **Croton cladotrichus,** Müll. Arg. in Linnæa, xxxiv., et in DC. Prodr. xv. 2, p. 640.

South Mexico, Puerto de Santa Cruz on the Pacific (*Liebmann*).

9. **Croton cortesianus,** H. B. K. Nov. Gen. et Sp. ii. p. 83; DC. Prodr. xv. 2, p. 627; Cham. et Schl. in Linnæa, vi. p. 361.

Croton trichocarpus, Torr. Bot. U.S. & Mex. Bound. Surv. p. 196.

North Mexico, Matamoros and San Fernando, Coahuila (*Berlandier*, 1503, 1540, 2244, 3003, 3040); South Mexico, near Campeachy (*Humboldt & Bonpland*), Actopan (*Schiede & Deppe*). Hb. Kew.

10. **Croton dioicus,** Cav. Ic. Pl. i. p. 4, t. 6; DC. Prodr. xv. 2, p. 691.

Croton elæagnifolius, Vahl in Geisel. Crot. Monogr. p. 9.

Croton tomentosus, Steud. Nomencl. Bot., ex Müll. Arg.

Mexico.

11. **Croton draco,** Cham. et Schl. in Linnæa, vi. p. 360; DC. Prodr. xv. 2, p. 546.

Croton draco δ. *genuinus,* Müll. Arg. in Linnæa, xxxiv. p. 90.

Cyclostigma draco, Kl. in Seem. Bot. Voy. 'Herald,' p. 105.

South Mexico, Jalapa, at 3000 feet (*Galeotti*, 3775), Sierra San Pedro Nolasco &c. (*Jurgensen*, 394), Mirador (*Linden*, 1351), Papantla (*Schiede & Deppe*). Hb. Kew.

12. **Croton ehrenbergii,** Schl. in Linnæa, xix. p. 248; DC. Prodr. xv. 2, p. 636.

South Mexico, near Mineral del Monte in Cuesta Blanca, at 7800 to 8400 feet, between Actopan and Izmiquilpan, and between Actopan and Pachuca (*Ehrenberg*).

13. **Croton ellipticus,** Nutt. Gen. N. Am. Pl. ii. p. 225, excl. syn. Torr.; DC. Prodr. xv. 2, p. 688.

Texas.—North Mexico ?, along the Rio Grande.

14. **Croton fragilis,** H. B. K. Nov. Gen. et Sp. ii. p. 75.

α. **sericeus,** Müll. Arg. in DC. Prodr. xv. 2, p. 642; Cham. et Schl. in Linnæa, v. p. 85 (species).

South Mexico, Plan del Rio (*Schiede & Deppe*), near Tlatetla, Vera Cruz (*Liebmann*). Hb. Kew.

β. **genuinus,** Müll. Arg. loc. cit.

Colombia.

15. **Croton francoanus,** Müll. Arg. in Linnæa, xxxiv. p. 124, et in DC. Prodr. xv. 2, p. 640.

South Mexico, near Oaxaca (*Franco; Liebmann*). Hb. Kew.

16. **Croton fruticulosus,** Torr. Bot. U. S. & Mex. Bound. Surv. p. 194.

α. **pallescens,** Müll. Arg. in DC. Prodr. xv. 2, p. 633.

Texas; New Mexico.—North Mexico, Sonora and Chihuahua (*Wright*, 639, 1803). Hb. Kew.

β. **fuscescens,** Müll. Arg. loc. cit. p. 634.

Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*).

17. **Croton glabellus,** Linn. Amœn. Acad. v. p. 409, quoad syn. Sloan., ex Müll. Arg. in DC. Prodr. xv. 2, p. 517.

South Mexico, various localities in Vera Cruz (*Liebmann*); Nicaragua, Chontales (*Tate*, 196, 345); Costa Rica, Aguacate and Volcan de Barba (*Œrsted*); Panama, Remedios, Veraguas (*Seemann*, 1651).—Colombia; West Indies. Hb. Kew.

18. **Croton glandulosus,** Linn. Amœn. Acad. v. p. 409; Geisel. Crot. Monogr. p. 64; Griseb. Fl. Brit. W. Ind. p. 41.

α. **adenodontus,** Müll. Arg. in DC. Prodr. xv. 2, p. 684.

Brazil.

β. **divaricatus,** Müll. Arg. loc. cit.; Sw. Prod. p. 100, et Fl. Ind. Occ. ii. p. 1187.

West Indies.

γ. **hirtus,** Müll. Arg. loc. cit.; Lhérit. Stirp. Nov. p. 17, t. 9 (species).

Mexico (hb. *Pavon*).—Colombia to Peru and Brazil, and in the West Indies.

δ. **gardneri,** Müll. Arg. in DC. Prodr. xv. 2. p. 684.

Brazil.

ε. **intermedius,** Müll. Arg. DC. Prodr. xv. 2, p. 684. ("Hanc ob rem præcedentes cum sequentibus arcte conjungit.")

South Mexico, near Vera Cruz (*Schiede*).—Brazil.

ζ. **scordioides,** Müll. Arg. loc. cit. p. 685; Lam. Encycl. ii. p. 215 (species).

Brazil.

η. **subincanus,** Müll. Arg. loc. cit.

Brazil.

θ. **tenellus,** Müll. Arg. loc. cit.

Venezuela.

ι. **genuinus,** Müll. Arg. loc. cit.

Croton glandulosus, Linn. Amœn. Acad. v. p. 409; Griseb. Fl. Brit. W. Ind. p. 41.

South Mexico, Vera Cruz (*Ehrenberg*), without locality (hb. *Pavon*).—West Indies.

κ. **lindheimeri,** Müll. Arg. loc. cit.

Texas.

λ. **angustifolius,** Müll. Arg. loc. cit. p. 686.

Texas.

μ. **septentrionalis,** Müll. Arg. loc. cit.

Croton glandulosus, Jacq. Ic. Pl. Rar. t. 194; A. Gr. Man. Bot. N. U. States, ed. 5, p. 438.

Carolina to Florida, Texas and New Mexico.—North Mexico?

19. **Croton gossypiifolius,** Vahl, Symb. ii. p. 98.

α. **hibiscifolius,** Müll. Arg. in Linnea, xxxiv. p. 88, et in DC. Prodr. xv. 2, p. 538.

Venezeula; Colombia.

β. **genuina,** Müll. Arg. loc. cit. p. 539; Vahl, Symb. ii. p. 98, t. 49 (species).

Venezuela; Guiana; West Indies.

γ. **stipularis,** Müll. Arg. loc. cit.

South Mexico, near Oaxaca (*Franco* ?); Costa Rica (*Hoffmann*).

δ. **heterophyllus,** Müll. Arg. loc. cit.; H. B. K. Nov. Gen. et Sp. ii. p. 88 (species).

Colombia.

20. **Croton grewiæfolius,** Müll. Arg. in Linnæa, xxxiv. p. 87, et in DC. Prodr. xv. 2, p. 537.

South Mexico, around Oaxaca (*Andrieux*, 110). Hb. Kew.

21. **Croton gracilis,** H. B. K. Nov. Gen. et Sp. ii. p. 69.

α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 691; Schl. in Linnæa, xix. p. 238, excl. syn. Eschsch.

Croton dioicus, Willd. Sp. Pl. iv. p. 534, non Cav.

Astrogyne crotonoides, Benth. Pl. Hartw. p. 14.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 828), Monterey (*Eaton & Edwards*); South Mexico, Vera Paz to Orizaba (*Müller*, 980), Llanos de Perote (*Schiede*), Sierra San Pedro Nolasco (*Jurgensen*, 287), Aguas Calientes (*Hartweg*, 83), Misteca Alta, 7000 feet (*Galeotti*, 7189). Hb. Kew.

β. **longiradiatus,** Müll. Arg. loc. cit.

South Mexico, near the city of Mexico (hb. *Pavon*).

22. **Croton heterochrous,** Müll. Arg. in Linnæa, xxxiv. p. 121, et in DC. Prodr. xv. 2, p. 630.

Nicaragua, between Metagalpa and Xinotega (*Ærsted*).

23. **Croton hoffmanni,** Müll. Arg. in Linnæa, xxxiv. p. 86, et in DC. Prodr. xv. 2, p. 534.

α. **incanus,** Müll. Arg. loc. cit.

Costa Rica (*Hoffmann*).

β. **viridis,** Müll. Arg. loc. cit.

Costa Rica (*Hoffmann*).

24. **Croton humilis,** Linn. Amœn. Acad. v. p. 410; DC. Prodr. xv. 2, p. 670.

Croton berlandieri, Torr. Bot. U.S. & Mex. Bound. Surv. p. 193; DC. Prodr. xv. 2, p. 587.

Croton subcapitatus, Müll. Arg. in Buek's Ind. ad DC. Prodr. pars 4, p. v.

Florida.—North Mexico, Matamoros, Nuevo Leon (*Berlandier*, 2125).—West Indies. Hb. Kew.

25. **Croton hypoleucus,** Schl. in Linnæa, xix. p. 246; DC. Prodr. xv. 2, p. 578.

Croton shepherdiæfolius, Schauer in Linnæa, xx. p. 729.

South Mexico, Zimapan and San José del Oro (*Schiede; Ehrenberg; Aschenborn*).

26. **Croton incanus,** H. B. K. Nov. Gen. et Sp. ii. p. 73; DC. Prodr. xv. 2, p. 659.

South Mexico, Los Organos, Actopan 8700 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*, 1512?), near El Puente de Dios (*Ehrenberg*). Hb. Kew.

27. **Croton leptostachyus,** H. B. K. Nov. Gen. et Sp. ii. p. 79; Benth. Pl. Hartw. p. 249.

α. **malacophyllus,** Müll. Arg. in DC. Prodr. xv. 2, p. 610; Benth. Pl. Hartw. p. 248 (species).

Colombia.

β. **genuinus,** Müll. Arg. loc. cit.

South Mexico, Mirador (*Linden*, 1350).—Colombia.

28. **Croton leucophyllus,** Müll. Arg. in Linnæa, xxxiv. p. 139, et in DC. Prodr. xv. 2, p. 681.

Texas or Mexico (*Berlandier*).

29. **Croton liebmanni,** Müll. Arg. in DC. Prodr. xv. 2, p. 665.
SOUTH MEXICO, near Santiago, Amatlan, Oaxaca (*Liebmann*).

30. **Croton lindheimerianus,** Scheele in Linnæa, xxv. p. 580; Torr. Bot. U.S. & Mex. Bound. Surv. p. 194; DC. Prodr. xv. 2, p. 579.
TEXAS; NEW MEXICO.—NORTH MEXICO, Chihuahua and Buena Vista, Nuevo Leon (*Gregg*), Soledad, twenty-five miles south-west of Monclova (*Palmer*, 1245). Hb. Kew.

31. **Croton lobatus,** Linn. Sp. Pl. ed. 1, p. 1005; Cham. et Schl. in Linnæa, v. p. 86.

ζ. **seemanni,** Müll. Arg. in DC. Prodr. xv. 2, p. 669.
Astræa seemanni, Kl. in Seem. Bot. Voy. 'Herald,' p. 103.
Croton leiocarpus, Bartl. Ind. Sem. Hort. Acad. Gœtt. 1855, et in Linnæa, xxviii. p. 358.
SOUTH MEXICO, Vera Cruz (*Schiede & Deppe*), Bejucal (*Liebmann*); NICARAGUA, near Granada (*Œrsted*); PANAMA, banks of the Chagres river, near Gorgona (*Seemann*, 621), about Panama (*S. Hayes*, 712). Hb. Kew.
Müller defines seven other varieties, which are widely spread in South America and the West Indies; and one of them recurs in Tropical Africa.

32. **Croton macrodontus,** Müll. Arg. in Linnæa, xxxiv. p. 128, et in DC. Prodr. xv. 2, p. 656.
SOUTH MEXICO, Hacienda de Jovo and Malcapam, Vera Cruz (*Liebmann*). Hb. Kew.

33. **Croton maritimus,** Walt. Fl. Carolin. p. 239; DC. Prodr. xv. 2, p. 689; H. B. K. Nov. Gen. et Sp. ii. p. 69; Linnæa, v. p. 86.
Gynamblosis maritima, Baill. Etud. Gén. Euphorb. p. 372.
Hendecandra maritima, Kl. in Erichs. Archiv, 1841, i. p. 252.
CAROLINA to TEXAS.—MEXICO, dunes of Vera Cruz (*Galeotti*, 3756), Mazatlan (*Coulter*, 1511), Campeachy (*Humboldt & Bonpland*); NICARAGUA, Greytown (*Tate*, 7 and 348); PANAMA, Portobello (*Billberg* ?).—VENEZUELA; WEST INDIES. Hb. Kew.

34. **Croton meissneri,** Müll. Arg. in DC. Prodr. xv. 2, p. 665.
SOUTH MEXICO, near Orizaba (*Müller*).

35. **Croton mexicanus,** Müll. Arg. in Linnæa, xxxiv. p. 113, et in DC. Prodr. v. 2, p. 603.

α. **glandulosus,** Müll. Arg. loc. cit. p. 604.
MEXICO (hb. *Pavon*).

β. **glabrescens,** Müll. Arg. loc. cit.
MEXICO (hb. *Pavon*).

γ. **subintegrifolius,** Müll. Arg. loc. cit. (forma simillima *C. fragili*, sed folia glanduligera &c.).
MEXICO (hb. *Pavon*).

36. **Croton miradorensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 627.

South Mexico, near Mirador (*Linden*, 1350), Cordillera of Vera Cruz (*Galeotti*, 3777). Hb. Kew.

37. **Croton morifolius,** Willd. Sp. Pl. iv. p. 535; Müll. Arg. in Linnæa, xxxiv. p. 125.

α. **lanatus,** Müll. Arg. in DC. Prodr. xv. 2, p. 641.

Mexico (*Müller*).

β. **obtusifolius,** Müll. Arg. loc. cit.

South Mexico, near Oaxaca (*Andrieux*, 109). Hb. Kew.

γ. **sphærocarpus,** Müll. Arg. loc. cit.; H. B. K. Nov. Gen. et Sp. ii. p. 84, t. 105 (species).

South Mexico, Volcan de Jorullo at about 3100 feet (*Humboldt & Bonpland*), near Mexico (*Ehrenberg*).

δ. **genuinus,** Müll. Arg. loc. cit. p. 642.

Cumana?

38. **Croton neomexicanus,** Müll. Arg. in Linnæa, xxxiv. p. 141, et in DC. Prodr. xv. 2, p. 690.

Texas; New Mexico.—North Mexico, Monterey (*Palmer*, 1240), Chihuahua (*Potts*). Hb. Kew.

39. **Croton niveus,** Jacq. Stirp. Am. p. 255, t. 162. fig. 2; DC. Prodr. xv. 2, p. 518.

Croton syringæfolius, H. B. K. Nov. Gen. et Sp. ii. p. 67.

South Mexico, Potrero de Consoquitla, near Mirador and Rio de los Vueltos, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen,* 711), Acapulco (*Beechey*); Guatemala, Volcan de Fuego at 3800 feet (*Salvin*), without locality (*Friedrichsthal*); Nicaragua, Segovia (*Œrsted*); Costa Rica (*Warscewicz*).—Venezuela; Colombia; Cuba. Hb. Kew.

40. **Croton œrstedianus,** Müll. Arg. in Linnæa, xxxiv. p. 105, et in DC. Prodr. xv. 2, p. 577.

Nicaragua, Segovia (*Œrsted*).

41. **Croton panamensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 546.

Cyclostigma panamense et *C. denticulatum,* Kl. in Seem. Bot. Voy. 'Herald,' p. 105.

South Mexico, Colipa (*Liebmann*), San Juan, near Orizaba, and valley of Cordova (*Bourgeau*, 2722 bis and 1684); Panama, Volcan de Chiriqui (*Seemann*), Paraiso (*S. Hayes*, 442). Hb. Kew.

42. **Croton populifolius,** Lam. Encycl. ii. p. 205; Griseb. Fl. Brit. W. Ind. p. 41.

α. **genuinus,** Müll. Arg. in DC. Prodr. xv. 2, p. 653.

Croton hircinus, Vent. Jard. Malm. p. et t. 50.

Croton tiliæfolius, Pers. Ench. ii. p. 585, non Lam.
Croton hispidus, H. B. K. Nov. Gen. et Sp. ii. p. 72.
Barhamia hispida et *B. panamensis*, Kl. in Seem. Bot. Voy. 'Herald,' p. 104.
Panama, Nata (*Seemann*).—Venezuela; Colombia; West Indies. Hb. Kew.

β. **essequiboensis,** Müll. Arg. loc. cit. p. 654.
Guiana.

43. **Croton pottsii,** Müll. Arg. in DC. Prodr. xv. 2, p. 561.
Lasiogyne pottsii, Kl. in Seem. Bot. Voy. 'Herald,' p. 278.
North Mexico, Chihuahua (*Potts*).

44. **Croton pulcher,** Müll. Arg. in DC. Prodr. xv. 2, p. 644.
South Mexico, near Tehuacan (*Liebmann*).

45. **Croton pungens,** Jacq. Ic. Pl. Rar. iii. p. 19, t. 622, et Collect. iv. p. 217.

α. **genuinus,** Müll. Arg. in Linnæa, xxxiv. p. 89, et in DC. Prodr. xv. 2, p. 541.
South Mexico, near Mirador (*Liebmann*); Costa Rica (*Hoffmann*).—Venezuela to Peru and Brazil. Hb. Kew.

β. **rhomboidalis,** Müll. Arg. loc. cit.
Venezuela.

46. **Croton reflexifolius,** H. B. K. Nov. Gen. et Sp. ii. p. 68; DC. Prodr. xv. 2, p. 518; Cham. et Schl. in Linnæa, vi. p. 359.
South Mexico, Papantla (*Liebmann; Schiede*), near Mexico (*Ehrenberg*), near Tantoyuca (*Ervendberg*), Acapulco (*Humboldt & Bonpland*).—Colombia. Hb. Kew.

47. **Croton repens,** Schl. in Linnæa, xix. p. 237; DC. Prodr. xv. 2, p. 594.
South Mexico, Hacienda de la Laguna (*Schiede*), Mirador (*Liebmann; Linden*, 793), Jalapa, 3000 feet (*Galeotti*, 3755), near Oaxaca (*Franco*). Hb. Kew.

48. **Croton riviniæfolius,** H. B. K. Nov. Gen. et Sp. ii. p. 80; DC. Prodr. xv. 2, p. 628.
South Mexico, Vera Cruz (*Liebmann*), near Tantoyuca (*Ervendberg*).—Colombia; Ecuador. Hb. Kew.

49. **Croton schiedeanus,** Schl. in Linnæa, xix. p. 243; DC. Prodr. xv. 2, p. 517.
South Mexico, between Nantla and Misantla (*Schiede*).

50. **Croton soliman,** Cham. et Schl. in Linnæa, vi. p. 361; DC. Prodr. xv. 2, p. 660.
North Mexico, Sonora Alta (*Coulter*, 1508); South Mexico, Papantla, "where it is called 'Soliman'" (*Schiede & Deppe*), Talea, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 735), Teapa (*Linden*, 884). Hb. Kew.

51. **Croton sonoræ,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 194; DC. Prodr. xv. 2, p. 695.

North Mexico, Sonora (*Schott*).

52. **Croton stipulaceus,** H. B. K. Nov. Gen. et Sp. ii. p. 85; DC. Prodr. xv. 2, p. 534; Linnæa, v. p. 85.

South Mexico, near San Andres (*Schiede & Deppe*), near Chinantla (*Liebmann*), Cordillera of Oaxaca, near the Pacific, at 5000 feet (*Galeotti*, 3751), near Venta de Chalco &c., at about 7000 feet (*Humboldt & Bonpland*). Hb. Kew.

53. **Croton stylosus,** Müll. Arg. in Linnæa, xxxiv. p. 128; DC. Prodr. xv. 2, p. 655.

Mexico (hb. *Pavon*).

54. **Croton subcompressus,** Müll. Arg. in DC. Prodr. xv. 2, p. 557.

Mexico or South America (hb. *Pavon*).

55. **Croton suberosus,** H. B. K. Nov. Gen. et Sp. ii. p. 86; DC. Prodr. xv. 2, p. 539.

South Mexico, Acapulco (*Humboldt & Bonpland*).

56. **Croton subfragilis,** Müll. Arg. in Linnæa, xxxiv. p. 111, et in DC. Prodr. xv. 2, p. 598.

South Mexico, near Tuxtla and Chiapa (hb. *Pavon*).

57. **Croton texensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 692.

Hendecandra texensis, Kl. in Erichs. Archiv, 1841, i. p. 252.

Croton muricatus, Nutt. in Trans. Am. Phil. Soc. n. s. v. p. 173, non aliorum; Torr. Bot. U.S. & Mex. Bound. Surv. p. 195.

Hendecandra multiflora, Torr. in Frem. First Rep. p. 96.

Colorado; Texas; New Mexico.—North Mexico, Sonora and Chihuahua (*Wright*, 1799; *Berlandier*, 1548). Hb. Kew.

58. **Croton virletianus,** Müll. Arg. in Linnæa, xxxiv. p. 133, et in DC. Prodr. xv. 2, p. 659.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

59. **Croton xalapensis,** H. B. K. Nov. Gen. et Sp. ii. p. 85; DC. Prodr. xv. 2; p. 596.

Cyclostigma xalapense, Kl. in Seem. Bot. Voy. 'Herald,' p. 105 (rectius *Palamostigma*?).

Palanostigma xalapense, Baill. Etud. Gén. Euphorb. p. 359.

South Mexico, near Jalapa at 4000 feet (*Galeotti*, 3769; *Humboldt & Bonpland*), valley of Cordova (*Bourgeau*, 1497), Mirador (*Liebmann*), Orizaba (*Sallé*). Hb. Kew.

11. JULOCROTON.

Julocroton, Mart. Herb. Fl. Bras. p. 119; Benth. et Hook. Gen. Plant. iii. p. 296.

Shrubs or undershrubs, inhabiting Tropical and Subtropical America from Mexico to Brazil. About twenty species are described.

1. **Julocroton argenteus,** Fr. Didrichs. Plant. nonnull. Mus. Univ. Hafn. 1857, p. 42; DC. Prodr. xv. 2, p. 703.

Croton argenteus, Linn. Sp. Pl. ed. 1, p. 1004; Geisel. Crot. Monogr. p. 67; H. B. K. Nov. Gen. et Sp. ii. p. 70.
Heterochlamys quinquenervia, Turcz. in Bull. Soc. Hist. Nat. Mosc. 1843, p. 62.
Julocroton quinquinervius, Baill. Etud. Gén. Euphorb. p. 376.

North Mexico, near Matamoros (*Berlandier*, 2280, 2282); Guatemala (*Friedrichsthal*); Nicaragua, Realejo (*Sinclair*), neighbourhood of Granada (*Lévy*, 9).—Colombia. Hb. Kew.

2. **Julocroton conspurcatus,** Kl. in Erichs. Archiv, 1841, i. p. 193.

Croton conspurcatus, Schl. in Linnæa, vii. p. 380.
Julocroton triqueter γ. *conspurcatus,* Müll. Arg. in DC. Prodr. xv. 2, p. 705.

South Mexico, Jalapa at 3000 feet (*Galeotti*, 3768), Tioselo (*Schiede*). Hb. Kew.

3. **Julocroton decalobus,** Benth. et Hook. Gen. Plant. iii. p. 296.

Croton decalobus, Müll. Arg. in Linnæa, xxxiv. p. 80, et in DC. Prodr. xv. 2, p. 523.

Guatemala (*Friedrichsthal*). Hb. Kew.

4. **Julocroton montevidensis** ε. **guatemalensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 703.

Guatemala (*Friedrichsthal*).

The forms α, β, γ, and δ, referred to this species by Müller, are from Brazil and Uruguay.

12. PAUSANDRA.

Pausandra, Radlk. in Flora, 1870, p. 92; Benth. et Hook. Gen. Plant. iii. p. 298.

An arboreous monotype.

1. **Pausandra morisiana,** Radlk. in Flora, 1870, p. 92, t. 2; Müll. Arg. in Mart. Fl. Bras. xi. 2, p. 503, t. 99.

Thouinia morisiana, Casar. Novar. Stirp. Bras. Dec. x. 1845.

Nicaragua, Chontales (*Lévy*, 484 or 486).—Colombia to Brazil. Hb. Kew.

13. ARGITHAMNIA.

Argithamnia, Sw. Prodr. p. 39, et Fl. Ind. Occ. p. 335, t. 8; Benth. et Hook. Gen. Plant. iii. p. 303.
Argyrothamnia, Müll. Arg. in DC. Prodr. xv. 2, p. 732.

An exclusively American genus of about thirty-seven shrubby and half-shrubby species, ranging from the southern United States to Chili and Buenos Ayres.

1. **Argithamnia fendleri,** Müll. Arg. in Linnæa, xxxiv. p. 145, et in DC. Prodr. xv. 2, p. 737.

Florida.—South Mexico, San Augustin (*Liebmann*).—Venezuela to Peru.

2. **Argithamnia guatemalensis,** Müll. Arg. in Linnæa, xxxiv. p. 145, et in DC. Prodr. xv. 2, p. 736.

South Mexico, Tehuacan (*Liebmann*), Cordillera of Oaxaca at 5000 feet (*Galeotti*, 7167); Guatemala (*Friedrichsthal*). Hb. Kew.

3. **Argithamnia heterantha,** Müll. Arg. in DC. Prodr. xv. 2, p. 735.

Ditaxis heterantha, Zucc. Pl. Nov. fasc. 1, n. 2.

South Mexico, near Toliman (*Karwinski*).

4. **Argithamnia lanceolata,** Müll. Arg. in Linnæa, xxxiv. p. 148, et in DC. Prodr. xv. 2, p. 741.

Serophyton lanceolatum, Benth. Bot. Voy. 'Sulphur,' p. 52.

Aphora lanceolata, Engelm. et A. Gr. Pl. Lindh. i. p. 25.

Lower California.—South Mexico, sand dunes of the Pacific, Oaxaca (*Galeotti*, 3742). Hb. Kew.

5. **Argithamnia neomexicana,** Müll. Arg. in Linnæa, xxxiv. p. 147, et in DC. Prodr. xv. 2, p. 739.

Aphora humilis, Torr. Bot. U.S. & Mex. Bound. Surv. p. 196, non Engelm. et A. Gr.

Texas; New Mexico.—North Mexico, San Lorenzo de Laguna, Coahuila, and Monterey, Nuevo Leon (*Palmer*, 1250, 1246). Hb. Kew.

6. **Argithamnia schiedeana,** Müll. Arg. in Linnæa, xxxiv. p. 150, et in DC. Prodr. xv. 2, p. 745.

α. **major,** Müll. Arg. loc. cit.

Tragia sp., Cham. et Schl. in Linnæa, v. p. 86, n. 67.

Chlorocaulon, Kl. in Endl. Gen. Plant., Suppl. iv. 3. p. 89.

South Mexico, Serro Colorado (*Schiede & Deppe*).

β. **minor,** Müll. Arg. loc. cit.

South Mexico, between Tampico and Real del Monte (*Berlandier*, 511), near Orizaba (*Müller*, 1360).

14. CAPERONIA.

Caperonia, St. Hil. Pl. Remarq. Bras. p. 244; Benth. et Hook. Gen. Plant. iii. p. 304.

Nineteen species are described; some of them very much alike. They are herbs or half-shrubs, and inhabit Tropical America and Africa.

1. **Caperonia castaneæfolia,** St. Hil. Pl. Remarq. Brésil, p. 245; DC. Prodr. xv. 2, p. 754.

Croton castaneæfolius, Linn. Sp. Pl. p. 1424.

Croton palustris, H. B. K. Nov. Gen. et Sp. ii. p. 71.
Ditaxis castaneæfolia, Baill. Adansonia, iv. p. 274.

South Mexico, Vera Cruz (*Müller*); Panama, San Juan (*Œrsted*), ditches about Panama (*S. Hayes*, 703; *Seemann*).—Colombia to Guiana and Brazil, and in Cuba. Hb. Kew.

2. **Caperonia palustris,** St. Hil. Pl. Remarq. p. 245; DC. Prodr. xv. 2, p. 754.
Croton castaneæfolius, H. B. K. Nov. Gen. et Sp. ii. p. 70, non Linn.
Lepidococca sieberi, Turcz. in Bull. Soc. Nat. Mosc. 1848, p. 589.
Androphoranthus glandulosus, Karst. Fl. Columb. ii. p. 15, t. 108.

South Mexico, Chinantla (*Liebmann*), Vera Cruz (*Müller*).—Venezuela; Guiana; West Indies. Hb. Kew.

3. **Caperonia paludosa,** Kl. in Hook. Lond. Journ. Bot. ii. p. 51; DC. Prodr. xv. 2, p. 755.
Caperonia panamensis, Kl. in Seem. Bot. Voy. 'Herald,' p. 103.

South Mexico, Jicaltepec (*Liebmann*); Panama, near Panama (*Seemann*, 119; *S. Hayes*, 714). Hb. Kew.

15. PSEUDOCROTON.

Pseudocroton, Müll. Arg. in Flora, 1872, p. 24; Benth. et Hook. Gen. Plant. iii. p. 304.

A shruby or arboreous monotype.

1. **Pseudocroton tinctorius,** Müll. Arg. in Flora, 1872, p. 24.

Nicaragua, Acota (*Tate*, 347), Managua (*Friedrichsthal*). Hb. Kew.

16. MANIHOT.

Manihot, Adans. Fam. ii. p. 356; Benth. et Hook. Gen. Plant. iii. p. 306.

Tall herbs or shrubs, more rarely trees. Eighty species have been described; and they are all restricted to America, chiefly to Brazil.

1. **Manihot æsculifolia,** Pohl, Pl. Bras. i. p. 55; DC. Prodr. xv. 2, p. 1165.
Janipha æsculifolia, H. B. K. Nov. Gen. et Sp. ii. p. 107, t. 109.
Jatropha æsculifolia, Steud. Nomencl. Bot.

South Mexico, Campeachy (*Humboldt & Bonpland*).

2. **Manihot angustiloba,** Müll. Arg. in DC. Prodr. xv. 2, p. 1073.
Janipha manihot, var. *angustiloba,* Torr. Bot. U.S. & Mex. Bound. Surv. p. 199.

New Mexico; Arizona.—North Mexico, Tubac and Santa Cruz, Sonora (*Schott*), Monterey, Nuevo Leon (*Gregg*); South Mexico, Michoacan at 4500 feet (*Galeotti*, 3734), Oaxaca (*Ghiesbreght*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 582). Hb. Kew.

3. **Mahihot carthagenensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 1073.
Jatropha carthagenensis, Jacq. Stirp. Am. Hist. p. 256, t. 162. fig. 1.

Jatropha janipha, Linn. Mant. p. 126.
Manihot janipha, Pohl, Pl. Bras. i. p. 55; Adansonia, iv. p. 283.
Janipha læflingii et *J. yuquilla*, H. B. K. Nov. Gen. et Sp. ii. p. 107; Torr. Bot. U.S. & Mex. Bound. Surv. p. 199.

TEXAS.—MEXICO (*Sessé*); PANAMA, Paraiso (*S. Hayes*, 717).—VENEZUELA; COLOMBIA. Hb. Kew.

4. **Manihot fœtida**, Pohl, Pl. Bras. i. p. 55; DC. Prodr. xv. 2, p. 1067.
Janipha fœtida, H. B. K. Nov. Gen. et Sp. ii. p. 106.
Jatropha fœtida, Steud. Nomencl. Bot.

SOUTH MEXICO, near Mescala, Cañada de Sopilote &c. at 1560 to 2580 feet (*Humboldt & Bonpland*).

5. **Manihot microcarpa**, Müll. Arg. in Flora, 1872, p. 42.

MEXICO (*Karwinski*).

6. **Manihot rhomboidea**, Müll. Arg. in Linnæa, xxxiv. p. 205, et in DC. Prodr. xv. 2, p. 1064.

MEXICO (*Sessé*).

7. **Manihot utilissima**, Pohl, Pl. Bras. i. p. 32, t. 24; DC. Prodr. xv. 2, p. 1064.

Widely dispersed in TROPICAL AMERICA, both wild and cultivated; also cultivated in many other hot countries.

17. BERNARDIA.

Bernardia, P. Br. Nat. Hist. Jam. p. 361, absque char. gen.; Benth. et Hook. Gen. Plant. iii. p. 308.

About twenty-four shrubby and herbaceous species, inhabiting Tropical and Subtropical America.

1. **Bernardia interrupta**, Müll. Arg. in Linnæa, xxxiv. p. 171, et in DC. Prodr. xv. 2, p. 916.
Acalypha interrupta, Schl. in Linnæa, vii. p. 386.
Adelia dodecandra, Sessé, ex Steud. Nomencl. Bot.
Alevia leptostachya, Baill. Etud. Gén. Euphorb. p. 509.

SOUTH MEXICO, Mirador, Jicaltepec, and Papantla (*Liebmann*), Hacienda de la Laguna (*Schiede*). Hb. Kew.

2. **Bernardia mexicana**, Müll. Arg. in Linnæa, xxxiv. p. 171, et in DC. Prodr. xv. 2, p. 916.

α. **genuina**, Müll. Arg. loc. cit.
Hermesia? mexicana, Hook. et Arn. Bot. Beech. Voy. p. 309.
Bernardia intermedia, Griseb. Pl. Cub. Wright. p. 160.

SOUTH MEXICO, Zimapan (*Coulter*, 1513), without locality (*Beechey*); NICARAGUA, Segovia (*Ærsted*).—VENEZUELA; CUBA; JAMAICA. Hb. Kew.

3. **Bernardia myricæfolia,** Benth. et Hook. Gen. Plant. iii. p. 308.

Tyria myricæfolia, Scheele in Linnæa, xxv. p. 581 ; Torr. Bot. U.S. & Mex. Bound. Surv. p. 201.
Ricinella myricæfolia, Müll. Arg. in Linnæa, xxxiv. p. 154, et in DC. Prodr. xv. 2, p. 729.

Texas to California.—North Mexico, Chihuahua (*Bigelow ; Schott*), Monclova &c., Coahuila (*Palmer*, 1232). Hb. Kew.

18. ACALYPHA.

Acalypha, Linn. Gen. Plant. n. 1082; Benth. et Hook. Gen. Plant. iii. p. 311.

Herbs, shrubs, or trees; generally dispersed in tropical countries; a few occurring in extratropical regions, and these chiefly in America.

1. **Acalypha adenostachya,** Müll. Arg. in Linnæa, xxxiv. p. 21, et in DC. Prodr. xv. 2, p. 829.

Mexico (*Uhde*).

2. **Acalypha anemioides,** H. B. K. Nov. Gen. et Sp. ii. p. 94; D. Dietr. Synop. Pl. v. p. 377 (lapsu *A. agrimonioides*).

a. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 886.

South Mexico, near Guanajuato at about 6500 feet (*Humboldt & Bonpland*).

β. **eglandulosa,** Müll. Arg. loc. cit.

Acalypha monostachya, Benth. Pl. Hartw. p. 15, non Cav.

South Mexico, Aguas Calientes (*Hartweg*, 88). Hb. Kew.

3. **Acalypha alopecuroides,** Jacq. Ic. Pl. Rar. iii. p. 19, t. 620; DC. Prodr. xv. 2, p. 882.

South Mexico, Mirador (*Linden*, 51), Jalapa (*Galeotti*, 330 ; *Coulter*, 1484); British Honduras (*Temple*) ; Guatemala, Chojoja, near Mazatenango (*Bernoulli*, 72); Panama, Chagres (*Fendler*, 321), Empire station (*S. Hayes*, 510), without locality (*Seemann*, 297). —Venezuela ; Cuba. Hb. Kew.

4. **Acalypha arvensis,** Poepp. et Endl. Nov. Gen. et Sp. iii. p. 21.

α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 881.

South Mexico, Potrero de San Sebastian, Pital and Colipa (*Liebmann*); Honduras (*Hjalmarsson*).—Peru.

β. **pavoniana,** Müll. Arg. loc. cit., et in Linnæa, xxxiv. p. 50 (species).

Mexico (hb. *Pavon*).

5. **Acalypha botteriana,** Müll. Arg. in Linnæa, xxxiv. pp. 46, 162, et in DC. Prodr. xv. 2, p. 875.

a. **pubescens,** Müll. Arg. loc. cit.

South Mexico, Cordillera of Oaxaca (*Liebmann*).

β. **genuina,** Müll. Arg. loc. cit.

South Mexico, region of Orizaba (*Müller*, 773 ; *Botteri* ; *Sallé*).

6. **Acalypha brachyclada,** Müll. Arg. in DC. Prodr. xv. 2, p. 862.

Mexico or Peru (hb. *Pavon*).

7. **Acalypha brevicaulis,** Müll. Arg. in Linnæa, xxxiv. p. 13, et in DC. Prodr. xv. 2, p. 814.

South Mexico, Cerro Ventoso, near Real del Monte (ex *Müller*).

8. **Acalypha chamædrifolia,** Müll. Arg. in DC. Prodr. xv. 2, p. 879.

Croton chamædrifolius, Lam. Encycl. ii. p. 214.
Acalypha reptans, Sw. Prodr. p. 99, et Fl. Ind. Occ. ii. p. 1170.
Acalypha microphylla, Kl. in Seem. Bot. Voy. 'Herald,' p. 278.
Acalypha reptans a. genuina, Müll. Arg. in Linnæa, xxxiv. p. 48.

Florida.—Mexico, Mazatlan (*Seemann*).—West Indies.

The forms α, γ, δ, ε, ζ, and η, described by Müller, are restricted to the West Indies and chiefly to Cuba.

9. **Acalypha cincta,** Müll. Arg. in Linnæa, xxxiv. p. 20, et in DC. Prodr. xv. 2, p. 832.

Mexico (hb. *Pavon*).

10. **Acalypha conspicua,** Müll. Arg. in DC. Prodr. xv. 2, p. 832.

South Mexico, Jalapa (*Linden*, 43).

11. **Acalypha cuspidata,** Jacq. Hort. Schœnb. ii. p. 63, t. 243.

γ. **genuina,** Müll. Arg. in Linnæa, xxxiv. p. 37, et in DC. Prodr. xv. 2, p. 859.

South Mexico, Orizaba (*Botteri*, 559)? Hb. Kew.

This species is widely spread from Venezuela to Peru and Brazil, as well as in the West Indies.

12. **Acalypha depauperata,** Müll. Arg. in Linnæa, xxxiv. p. 160, et in DC. Prodr. xv. 2, p. 813.

South Mexico, Yavezia, Oaxaca at 7800 feet (*Liebmann*).

13. **Acalypha diversifolia,** Jacq. Hort. Schœnb. ii. p. 63, t. 244.

α. **popayanensis,** Müll. Arg. in DC. Prodr. xv. 2, p. 853 ; H. B. K. Nov. Gen. et Sp. vii. p. 173 (species).

Acalypha leptostachya a. popayanensis, Müll. Arg. in Linnæa, xxxiv. p. 34.

Colombia.

β. **leptostachya,** Müll. Arg. loc. cit. p. 854 ; H. B. K. Nov. Gen. et Sp. ii. p. 96 (species).

Acalypha billbergiana, Kl., et *A. panamensis,* Kl. in Seem. Bot. Voy. 'Herald,' p. 101.
Acalypha leptostachya β. *genuina,* Müll. Arg. in Linnæa, xxxiv. p. 34.

Guatemala, Rio de Mazatenango (*Bernoulli*, 385) ; Nicaragua, Chontales (*Tate*, 177,

350); Panama, Chagres (*Fendler*, 281), around Cruces (*Seemann*, 543), Mamei station (*S. Hayes*, 713).—Southward to Peru. Hb. Kew.

γ. **carpinifolia,** Müll. Arg. loc. cit.; Poepp., ex Baill. Etud. Gén. Euphorb. p. 442.
Mexico (*Linden*, 5).—Venezuela to Peru.

δ. **genuina,** Müll. Arg. loc. cit.; Jacq. Hort. Schœnb. ii. p. 63, t. 244; Willd. Sp. Pl. iv. p. 520.
Venezuela; Colombia.

14. **Acalypha firmula,** Müll. Arg. in Linnæa, xxxiv. p. 21, et in DC. Prodr. xv. 2, p. 829.
Salvador (*Hjalmarsson*).

15. **Acalypha fournieri,** Müll. Arg. in Linnæa, xxxiv. p. 162, et in DC. Prodr. xv. 2, p. 838.
North Mexico, San Luis Potosi (*Virlet d'Aoust*).

16. **Acalypha frederici,** Müll. Arg. in DC. Prodr. xv. 2, p. 828.
South Mexico, near Orizaba (*F. Müller*, 767).

17. **Acalypha glandulosa,** Cav. Ic. Pl. vi. p. 49, t. 570; DC. Prodr. xv. 2, p. 814.
Mexico, near Salvatierra (ex *Cavanilles*).

18. **Acalypha hederacea,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 200.
α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 885.
Texas; New Mexico.—North Mexico, Nuevo Leon and Chihuahua (*Eaton & Edwards; Gregg*), Parras, Coahuila (*Palmer*, 1252). Hb. Kew.

β. **oligodonta,** Müll. Arg. loc. cit. p. 886, et in Linnæa, xxxiv. p. 53.
New Mexico.

γ. **orbicularis,** Müll. Arg. in DC. Prodr. xv. 2, p. 886.
South Mexico, San Lorenzo, near Tehuacan (*Liebmann*).

19. **Acalypha karwinskii,** Müll. Arg. in Flora, 1872, p. 41.
Mexico (*Karwinski*).

20. **Acalypha lagascana,** Müll. Arg. in Flora, 1872, p. 27.
Mexico (*Lagasca*).

21. **Acalypha langiana,** Müll. Arg. in Linnæa, xxxiv. p. 159, et in DC. Prodr. xv. 2, p. 811.
South Mexico, valley of Oaxaca, near Quilapa (*Liebmann*).

22. **Acalypha laxiflora,** Müll. Arg. in Linnæa, xxxiv. p. 18, et in DC. Prodr xv. 2, p. 830.
South Mexico, near Vera Cruz (*Liebmann*).—Cuba.

23. **Acalypha leptoclada,** Benth. Bot. Voy. 'Sulphur,' p. 164; DC. Prodr. xv. 2, p. 814.

South Mexico, San Blas to Tepic (*Sinclair*). Hb. Kew.

24. **Acalypha leptopoda,** Müll. Arg. in Linnæa, xxxiv. p. 39.

α. **mollis,** Müll. Arg. in DC. Prodr. xv. 2, p. 824.

South Mexico, Mirador and Barranca de Consoquitla (*Liebmann*).

β. **glabrescens,** Müll. Arg. loc. cit.

South Mexico, Mirador and other localities (*Liebmann; Müller*, 2206); Costa Rica (*Hoffmann*, 175).

25. **Acalypha liebmanniana,** Müll. Arg. in Linnæa, xxxiv. p. 161, et in DC. Prodr. xv. 2, p. 829 (ubi *liebmanni*).

South Mexico, Colipa (*Liebmann*).

26. **Acalypha lindeniana,** Müll. Arg. in DC. Prodr. xv. 2, p. 827.

South Mexico, Puente Nacional, Vera Cruz (*Linden*, 50), near Vera Cruz (*Galeotti*, 316). Hb. Kew.

27. **Acalypha lindheimeri,** Müll. Arg. in Linnæa, xxxiv. p. 47, et in DC. Prodr. xv. 2, p. 875.

Acalypha phleoides, Torr. Bot. U.S. & Mex. Bound. Surv. p. 199, non Cav.

Texas.—North Mexico, Chihuahua, Coahuila, and Sonora (ex *Torrey*). Hb. Kew.

28. **Acalypha longespicata,** Müll. Arg. in Linnæa, xxxiv. p. 163, et in DC. Prodr. xv. 2, p. 884.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

29. **Acalypha longestipularis,** Müll. Arg. in Linnæa, xxxiv. p. 51, et in DC. Prodr. xv. 2, p. 883.

South Mexico, near Oaxaca (ex *Müller*).

30. **Acalypha macrostachya,** Jacq. Hort. Schœnb. ii. p. 63, t. 245; Müll. Arg. in DC. Prodr. xv. 2, p. 810 (varietates plures).

β. **sidæfolia,** Müll. Arg. in Linnæa, xxxiv. p. 11, et in DC. Prodr. xv. 2, p. 810; H. B. K. Nov. Gen. et Sp. ii. p. 95 (species).

Acalypha seemanni, Kl. in Seem. Bot. Voy. 'Herald,' p. 102.

South Mexico, near Jalapa, 3000 to 4000 feet (*Galeotti*, 309), valley of Cordova (*Bourgeau*, 1465, 2124, 2243); Guatemala (*Friedrichsthal*); Costa Rica (*Endres*); Panama, near Cruces (*Seemann*, 496).—Venezuela to Peru. Hb. Kew.

The other varieties are from the southern part of the same region.

31. **Acalypha macrostachyoides,** Müll. Arg. in DC. Prodr. xv. 2, p. 809.

Mexico (ex *Müller*).

32. **Acalypha melochiæfolia,** Müll. Arg. in DC. Prodr. xv. 2, p. 821.

South Mexico, Hacienda Perado, near Orizaba (*Müller*, 1758).

33. **Acalypha mexicana,** Müll. Arg. in Linnæa, xxxiv. p. 41, et in DC. Prodr. xv. 2, p. 868.

Mexico (*Ehrenberg ; Uhde*).

34. **Acalypha microcephala,** Müll. Arg. in Linnæa, xxxiv. p. 160, et in DC. Prodr. xv. 2, p. 823.

South Mexico, eastern Cordillera of Oaxaca (*Liebmann*)

35. **Acalypha mollis,** H. B. K. Nov. Gen. et Sp. ii. p. 94 ; DC. Prodr. xv. 2, p. 828.

Acalypha microstachya, Benth. Pl. Hartw. p. 71.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 824) ; South Mexico, near Rancho del Ojo de Agua (*Hartweg*, 512), Venta de Chalco at 7200 feet (*Humboldt & Bonpland*). Hb. Kew.

36. **Acalypha monostachya,** Cav. Anal. Hist. Nat. ii. p. 138, et Ic. Pl. vi. p. 47, t. 568. fig. 3 ; DC. Prodr. xv. 2, p. 886.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*); South Mexico, sandhills near the Pacific (*Galeotti*, 322), Mazatlan (*Seemann*, 1521), without locality (*Aschenborn*). Hb. Kew.

37. **Acalypha obscura,** Müll. Arg. in Linnæa, xxxiv. p. 163, et in DC. Prodr. xv. 2, p. 876.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

38. **Acalypha ocymoides,** H. B. K. Nov. Gen. et Sp. ii. p. 93 ; DC. Prodr. xv. 2, p. 838.

South Mexico, Volcan de Jorullo at about 3700 feet (*Humboldt & Bonpland*).

39. **Acalypha oligantha,** Müll. Arg. in Linnæa, xxxiv. p. 159, et in DC. Prodr. xv. 2, p. 811.

South Mexico, Santa Maria Tlapacoya and at Paso del Correo on the banks of the Tecolata, Vera Cruz (*Liebmann*).

40. **Acalypha oligodonta,** Müll. Arg. in DC. Prodr. xv. 2, p. 831.

South Mexico, Sierra San Pedro Nolasco (*Jurgensen*, 518), Orizaba (*Botteri*, 320). Hb. Kew.

[*A. padifolia,* H. B. K., is erroneously recorded from Mexico by Müller in DC. Prodr. xv. 2, p. 826.]

41. **Acalypha parvifolia,** Müll. Arg. in Linnæa, xxxiv. p. 161, et in DC. Prodr. xv. 2, p. 831.

South Mexico, near San Augustin by the Pacific (*Liebmann*).

42. **Acalypha persimilis,** Müll. Arg. in Linnæa, xxxiv. p. 25, et in DC. Prodr. xv. 2, p. 842.

South Mexico, Guanabatano (*Liebmann*).—Cuba.

43. **Acalypha phleoides,** Cav. Ic. Pl. vi. p. 48, t. 569. fig. 2.

α. **hirta,** Müll. Arg. in Linnæa, xxxiv. p. 46, et in DC. Prodr. xv. 2, p. 876 ; Cav. Ic. Pl. vi. p. 48, t. 569. fig. 3 (species).

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 826 ; *Virlet d'Aoust*) ; South Mexico, near Orizaba (*Müller*). Hb. Kew.

β. **genuina,** Müll. Arg. loc. cit.

Acalypha rubra, Willd. Enum. Pl. Hort. Berol. p. 992.
Acalypha prunifolia, H. B. K. Nov. Gen. et Sp. ii. p. 92, non Nees et Mart.
Acalypha pastoris, Schrank in Denkschr. König. Bayer. Gesellsch. ii. p. 39.

South Mexico, Leon (*Hartweg*), Chapoltepec at about 7000 feet (*Humboldt & Bonpland*), Cerro de Filipe, Oaxaca (*Liebmann*), Zimapan and Zacatecas (*Coulter*, 1477, 1482), valley of Mexico (*Schaffner*, 471). Hb. Kew.

44. **Acalypha pilosa,** Cav. Ic. Pl. vi. p. 46, t. 568. fig. 2 ; DC. Prodr. xv. 2, p. 814.

Mexico (*Beechey*) ; Panama (ex *Cavanilles*). Hb. Kew.

45. **Acalypha polystachya,** Jacq. Hort. Schœnb. ii. p. 64, t. 246 ; DC. Prodr. xv. 2, p. 841.

Mexico (hb. *Pavon*) ; Guatemala, Chilion, near Mazatenango (*Bernoulli*, 381).—Peru. Hb. Kew.

46. **Acalypha purpurascens,** H. B. K. Nov. Gen. et Sp. ii. p. 97.

α. **genuina,** Müll. Arg. in. Linnæa, xxxiv. p. 52, et in DC. Prodr. xv. 2, p. 884.

South Mexico, Santa Rosa at about 7000 feet (*Humboldt & Bonpland*).

β. **eglandulosa,** Müll. Arg. loc. cit. p. 885.

North Mexico, San Luis Potosi (*Virlet d'Aoust*) ; South Mexico, Baños (*Ehrenberg*), Zacoalco (*Bourgeau*, 634). Hb. Kew.

47. **Acalypha radians,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 200.

α. **geraniifolia,** Müll. Arg. in Linnæa, xxxiv. p. 52, et in DC. Prodr. xv. 2, p. 885.

Texas.

β. **genuina,** Müll. Arg. loc. cit.

Texas ; New Mexico.—North Mexico, northern States (ex *Torrey*). Hb. Kew.

48. **Acalypha rhombifolia,** Schl. in Linnæa, vii. p. 382 ; DC. Prodr. xv. 2, p. 880.

South Mexico, Jalapa (*Schiede*), near Huatusco (*Liebmann*).

49. **Acalypha schiedeana,** Schl. in Linnæa, vii. p. 384.

α. **genuina,** Müll. Arg. in Linnæa, xxxiv. p. 20, et in DC. Prodr. xv. 2, p. 831.
South Mexico, near Jalapa (*Schiede*), near Mirador and in Isleta (*Liebmann*).—Venezuela.

β. **macrodonta,** Müll. Arg. loc. cit. p. 832.
Nicaragua, near Granada (*Ærsted*).

γ. **deppeana,** Müll. loc. cit.; Schl. in Linnæa, vii. p. 385 (species).
South Mexico, Plan del Rio (*Schiede & Deppe*).

50. **Acalypha schlechtendaliana,** Müll. Arg. in Linnæa, xxxiv. pp. 6 et 159.

α. **mollis,** Müll. Arg. loc. cit., et in DC. Prodr. xv. 2, p. 800.
South Mexico, near Mirador and Papantla (*Liebmann*).

β. **genuina,** Müll. Arg. loc. cit.
Acalypha filiformis, Schl. olim, ex ipso in Linnæa, xix. p. 235.
Linostachys padifolia, Schl. in Linnæa, xix. p. 235, non *Acalypha padifolia,* H. B. K.
South Mexico, near Jalapa (*Galeotti*, 7093), Mirador (*Linden*, 5), near Misantla (*Schiede*), Mirador and Papantla (*Liebmann*). Hb. Kew.

51. **Acalypha schlumbergeri,** Müll. in DC. Prodr. xv. 2, p. 861.
South Mexico (*Müller*).

52. **Acalypha septemloba,** Müll. Arg. in Flora, 1872, p. 27.
Costa Rica, Cartago (*Friedrichsthal*).

53. **Acalypha setosa,** A. Rich. in Ram. de la Sagr. Hist. Cub. p. 204; DC. Prodr. xv. 2, p. 842.
South Mexico, Vera Cruz (*Liebmann*), without locality (hb. *Pavon*).—Cuba.

54. **Acalypha subtomentosa,** Lagasc. Gen. et Sp. Nov. p. 21; DC. Prodr. xv. 2, p. 888.
Mexico (*Sessé*).

55. **Acalypha trachyloba,** Müll. Arg. in Flora, 1872, p. 25.
South Mexico, near Oaxaca (*Andrieux*).

56. **Acalypha tricholoba,** Müll. Arg. in Linnæa, xxxiv. p. 16, et in DC. Prodr. xv. 2, p. 822.
Mexico (hb. *Pavon*).

57. **Acalypha triloba,** Müll. Arg. in Linnæa, xxxiv. p. 23, et in DC. Prodr. xv. 2, p. 838.
Mexico (hb. *Pavon*).

58. **Acalypha unibracteata,** Müll. Arg. in Linnæa, xxxiv. p. 160, et in DC. Prodr. xv. 2, p. 824.

South Mexico, between Mirador and Jalapa (*Liebmann*).

59. **Acalypha vagans,** Cav. Ic. Pl. vi. p. 47, t. 569. fig. 1; Linnæa, vii. p. 383.

α. **genuina,** Müll. Arg. in Linnæa, xxxiv. p. 161, et in DC. Prodr. xv. 2, p. 829.

South Mexico, near Orizaba (*Müller*), Hacienda de la Laguna (*Schiede*), near Mirador and Consoquitla (*Liebmann*), Acapulco (ex *Cavanilles*).

β. **glandulosa,** Müll. Arg. loc. cit.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Guatulco (*Liebmann*).

60. **Acalypha villosa,** Jacq. Sel. Am. Stirp. p. 254, t. 183. fig. 61.

α. **tomentosa,** Müll. Arg. in Linnæa, xxxiv. p. 8, et in DC. Prodr. xv. 2, p. 801.

Costa Rica (*Hoffmann*).—Venezuela; Peru.

β. **intermedia,** Müll. Arg. loc. cit. p. 802.

Venezuela.

γ. **genuina,** Müll. Arg. loc. cit.; Jacq. Hort. Vindob. iii. p. 27, t. 47.

Gymnalypha jacquini, Griseb. in Bonplandia, 1858, p. 2.
Acalypha linostachys; Baill. Adansonia, v. p. 235.

Panama, Isle of Taboga (*S. Hayes,* 657).—Venezuela to Peru and Brazil; also in the West Indies. Hb. Kew.

61. **Acalypha virginica,** Linn. Sp. Pl. ed. 3, p. 1423; Müll. Arg. in DC. Prodr. xv. 2, p. 869 (varietates plures).

Canada southward to Texas and New Mexico.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer,* 737); South Mexico, valley of Mexico (*Schaffner,* 472, 473). Hb. Kew.

19. ADELIA.

Adelia, Linn. Gen. Plant. n. 1137, pro parte; Benth. et Hook. Gen. Plant. iii. p. 312.
Ricinella, Müll. Arg. in Linnæa, xxxiv. p. 153.

About six shrubby species inhabiting America from Mexico to Colombia and the West Indies, with one in Brazil.

1. **Adelia barbinervis,** Cham. et Schl. in Linnæa, vi. p. 362.

Ricinella barbinervis, Müll. Arg. in Linnæa, xxxiv. p. 154, et in DC. Prodr. xv. 2, p. 730.

North Mexico, Santa Barbara to Horcasitas (*Berlandier,* 2166); South Mexico, Papantla (*Schiede & Deppe*). Hb. Kew.

2. **Adelia oaxacana,** Hemsley.

Ricinella oaxacana, Müll. Arg. in Linnæa, xxxiv. p. 154, et in DC. Prodr. xv. 2, p. 731.

South Mexico, Rio de las Vueltas, Oaxaca (*Liebmann*). Hb. Kew.

3. **Adelia triloba,** Hemsley.

Ricinella triloba, Müll. Arg. in Linnæa, xxxiv. p. 153, et in DC. Prodr. xv. 2, p. 731.

Panama, Mamei station (*S. Hayes*, 498). Hb. Kew.

20. ALCHORNEA.

Alchornea, Sw. Prodr. p. 98, et Fl. Ind. Occ. p. 1153, t. 24; Benth. et Hook. Gen. Plant. iii. p. 314.

This genus comprises about thirty shrubby and arboreous species, widely diffused in hot countries.

1. **Alchornea grandiflora,** Müll. Arg. in Linnæa, xxxiv. p. 170, et in DC. Prodr. xv. 2, p. 907.

Costa Rica (*Hoffmann*, 530).—Venezuela.

2. **Alchornea latifolia,** Sw. Prodr. p. 98, et Fl. Ind. Occ. p. 1154, t. 24; DC. Prodr. xv. 2, p. 908; Hayne, Arznei-Gewäch. x. t. 42.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 922).—Cuba; Jamaica; S. Domingo. Hb. Kew.

3. **Alchornea platyphylla,** Müll. Arg. in Linnæa, xxxiv. p. 171, et in DC. Prodr. xv. 2, p. 912.

Costa Rica, Pacaca (*Œrsted*).

4. **Alchornea similis,** Müll. Arg. in Flora, 1864, p. 434, et in DC. Prodr. xv. 2, p. 908.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 561). Hb. Kew.

21. CLEIDION.

Cleidion, Bl. Bijdr. p. 612; Benth. et Hook. Gen. Plant. iii. p. 320.

Thirteen arboreous species are referred to this genus, which is represented in Tropical Asia, Africa, and America, and in the Pacific Islands.

1. **Cleidion? nicaraguense,** Hemsley, n. sp.

Glabrescens, foliis caudato-acuminatis grosse crenato-serratis, floribus ♂ racemosis hirsutis, racemis ad pollicaribus paucifloris, staminibus ad 35.

Frutex vel *arbor*, ramulis gracilibus, primum plus minusve hirtis, ferrugineis. *Folia* alterna, breviter petiolata, tenuia, præter costam parcissime puberulam glabra, oblongo-lanceolata, 4–7 poll. longa, $1\frac{1}{2}$–2 poll. lata, basi obtusissima vel obsolete bilobata, apice longe caudato-acuminata, obtusa, grosse crenato-serrata (dentibus utrinque sæpius 8), venis primariis transversis subtus elevatis, utrinque sæpius 8, in dentibus excurrentibus; petiolus 3–4 lineas longus, puberulus; stipulæ angustæ, acutæ, 2–3 lineas longæ. *Flores* (♂ tantum visi) hirsuti, 3–4 lineas diametro, fasciculato-racemosi, breviter pedicellati; racemi axillares, circiter 1 poll. longi, pauciflori; calyx 3-partitus, segmentis æstivatione valvatis; stamina circiter 35; filamenta libera, filiformia; connectivum latiusculum, apice minute penicillatum.

Nicaragua, Chontales (*Tate*, 352, 455). Hb. Kew.

22. RICINUS.

Ricinus, Linn. Gen. Plant. n. 1085; Benth. et Hook. Gen. Plant. iii. p. 321.

A robust herbaceous monotype.

1. **Ricinus communis,** Linn. Sp. Pl. ed. 1, p. 1007, excl. syn. pr. p. et var. β; DC. Prodr. xv. 2, p. 1017 (varietates 16); Jacq. Ic. Pl. Rar. tt. 195 et 196; Baill. Etud. Gén. Euphorb. tt. 10 et 11.

The castor-oil plant is now found wild in nearly all warm countries, including Mexico and Central America; but it is impossible to determine where it is really indigenous. Hb. Kew.

23. PLUKENETIA.

Plukenetia, Linn. Gen. Plant. n. 1080; Benth. et Hook. Gen. Plant. iii. p. 327.

Shrubs or half-shrubs. About twelve species, widely dispersed in tropical countries, though none have hitherto been found in Australia.

1. **Plukenetia penninervia,** Müll. Arg. in Linnæa, xxxiv. p. 158, et in DC. Prodr. xv. 2, p. 770.

Mexico (hb. *Pavon*).—Venezuela.

24. TRAGIA.

Tragia, Linn. Gen. Plant. n. 1048; Benth. et Hook. Gen. Plant. iii. p. 329.

Herbs or climbing shrubs. About fifty species, widely spread in the tropics, and extending into extratropical South America and North America.

1. **Tragia bailloniana,** Müll. Arg. in Linnæa, xxxiv. p. 178, et in DC. Prodr. xv. 2, p. 927.

Zuckertia cordata, Baill. Etud. Gén. Euphorb. p. 496, t. 4. figg. 10–13.

South Mexico, Teapa (*Linden*).

2. **Tragia laciniata,** Müll. Arg. in Linnæa, xxxiv. p. 182, et in DC. Prodr. xv. 2, p. 933.

Tragia urticæfolia, var. *laciniata,* Torr. Bot. U.S. & Mex. Bound. Surv. p. 200.

North Mexico, Soñora (*Wright,* 1795; *Thurber*). Hb. Kew.

3. **Tragia mexicana,** Müll. Arg. in Linnæa, xxxiv. p. 181, et in DC. Prodr. xv. 2, p. 931.

South Mexico, near Hacienda de Jovo (*Liebmann*).

4. **Tragia nepetæfolia,** Cav. Ic. Pl. vi. p. 37, t. 557. fig. 1.

α. **dissecta,** Müll. Arg. in DC. Prodr. xv. 2, p. 933.

Mexico (hb. *Pavon*).

β. **latifolia,** Müll. Arg. loc. cit. p. 934.

Tragia urticæfolia, Mich.?, ex Benth. Pl. Hartw. p. 14.

New Mexico.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Guanajuato (*Hartweg*, 82). Hb. Kew.

γ. **amblyodonta,** Müll. Arg. loc. cit.

New Mexico.

δ. **teucriifolia,** Müll. Arg. loc. cit.; Scheele in Linnæa, xxv. p. 586 (species).

Texas.

ε. **ramosa,** Müll. Arg. loc. cit.; Torr. in Ann. Lyc. N. York, ii. p. 245, pro parte (species).

Texas.—Mexico, Tlatetla and Mirador (*Liebmann*).

ζ. **genuina,** Müll. Arg. loc. cit.

Mexico (*Nee*).

η. *scutellariæfolia* and θ. *angustifolia,* Müll. Arg., are only recorded from Texas.

5. **Tragia stylaris,** Müll. Arg. in Linnæa, xxxiv. p. 180, et in DC. Prodr. xv. 2, p. 930 (varietates).

Colorado to New Mexico and Texas.—North Mexico, along the Rio Grande down to the Gulf (ex *Torrey*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 827). Hb. Kew.

6. **Tragia urticæfolia,** Michx. Fl. Bor.-Am. ii. p. 176; DC. Prodr. xv. 2, p. 934.

Virginia, Kentucky, and Arkansas southward to Florida and Texas.—Mexico, without locality (*Schiede*), Tampico (*Berlandier*, 40, 180).

25. DALECHAMPIA.

Dalechampia, Linn. Gen. Plant. n. 1081; Benth. et Hook. Gen. Plant. iii. p. 330.

A genus of about sixty shrubby and half-shrubby species, widely dispersed in hot countries, though most numerous in America.

1. **Dalechampia friedrichsthalii,** Müll. Arg. in Flora, 1872, p. 45.

Guatemala, Rio San Juan (*Friedrichsthal*).

2. **Dalechampia roezliana,** Müll. Arg. in DC. Prodr. xv. 2, p. 1233, α et β; Bot. Mag. t. 5640; Regel's Gartenfl. t. 532.

South Mexico, province of Vera Cruz (*Roezl*). Hb. Kew.

3. **Dalechampia scandens,** Linn. Syst. ed. 13, p. 720, et Mantissa, p. 496.

α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 1244; Jacq. Stirp. Sel. Am. t. 160.

Nicaragua, San Juan (*Œrsted*).—Venezuela to Guiana and in the West Indies.

γ. **mollis,** Müll. Arg. in DC. Prodr. xviii. 2, p. 1244; H. B. K. Nov. Gen. et Sp. ii. p. 101 (species).

NICARAGUA (*Ærsted*).—VENEZUELA.

δ. **fimbriata,** Müll. Arg. loc. cit.; H. B. K. Nov. Gen. et Sp. i. p. 100 (species .

SOUTH MEXICO, Campeachy (*Humboldt & Bonpland*), Potrero de Cazadero (*Liebmann*); NICARAGUA, Granada (*Ærsted*). Hb. Kew.

Müller distinguishes several other varieties collected in BRAZIL, PERU, Tropical AFRICA, and INDIA.

4. **Dalechampia spathulata,** Baill. Etud. Gén. Euphorb. p. 487, t. 3. figg. 16–30; DC. Prodr. xv. 2, p. 1233.

Cremophyllum spathulatum, Scheidw. in Bull. Acad. Brux. ix. 1, p. 23; Flora, 1843, p. 514; Otto & Dietr. Allg. Gart. Zeit. 1848, p. 130; Bot. Zeit. 1849, p. 141.

SOUTH MEXICO, Teapa, Tabasco (*Linden*, 1614). Hb. Kew.

5. **Dalechampia tiliæfolia,** Lam. Encycl. ii. p. 257; DC. Prodr. xv. 2, p. 1246.

PANAMA, Paraiso (*S. Hayes*, 532).—Southward to PERU and BRAZIL, and in the WEST INDIES. Hb. Kew.

6. **Dalechampia triphylla,** Lam. Encycl. ii. p. 258, ε. **mexicana,** Müll. Arg. in DC. Prodr. xv. 2, p. 1240.

SOUTH MEXICO, Jalapa, 3000 feet (*Galeotti*, 3771), Mirador (*Linden*, 790). Hb. Kew.

26. MABEA.

Mabea, Aubl. Pl. Guian. p. 867, t. 334; Benth. et Hook. Gen. Plant. iii. p. 331.

A Tropical-American genus of about sixteen arboreous species.

1. **Mabea montana,** Müll. Arg. in DC. Prodr. xv. 2, p. 1151.

PANAMA, Frijoli station (*S. Hayes*, 495, 715).—VENEZUELA; COLOMBIA. Hb. Kew.

2. **Mabea piriri,** Aubl. Pl. Guian. p. 867, t. 334, α. **genuina,** Müll. Arg. in DC. Prodr. xv. 2, p. 1150.

Mabea piriri, Aubl. Benth. Bot. Voy. 'Sulphur,' p. 165, et Kl. in Seem. Bot. Voy. 'Herald,' p. 102.
Mabea occidentalis α, Benth. in Hook. Kew Journ. Bot. vi. p. 364.

SOUTH MEXICO, Hacienda de Azufré (*Linden*, 886); PANAMA, near the city of Panama (*Seemann*, 290).—VENEZUELA; GUIANA; BRAZIL. Hb. Kew.

Müller defines several other varieties from the same countries and Peru.

27. OMPHALEA.

Omphalea, Linn. Gen. Pl. n. 1039; Benth. et Hook. Gen. Plant. iii. p. 332.

Trees or climbing shrubs. Ten species are known, whereof one is a native of Madagascar, and the rest of Tropical America.

1. **Omphalea cardiophylla,** Hemsley in Pharmac. Journ. & Trans. 1882, p. 301.

Foliis amplis fere orbicularibus profunde cordatis glaberrimis, paniculis angustis elongatis, bracteis oblanceolatis ad 2 poll. longis.

Arbor 30 ad 40-pedalis (fide Hayesii) ramulis. . . . . *Folia* (2 tantum visa) longe petiolata, tenuia, papyracea (in vivis subcarnosa?), glaberrima, suborbicularia, basi profunde cordata, apice acuminata, obtusa, (majus fere pedem diametro,) undulata, venis primariis lateralibus utrinque 5–6, conspicuis; petiolus (perfectus deest) saltem 4 poll. longus, apice 2-glandulosus, crassus, carnosus, in siccis infra medium crassior. *Flores* (♂ tantum visi) paniculati; paniculæ angustæ, graciles, terminales, (pendulæ?,) pedem vel ultra longæ, obsolete puberulæ; bracteæ oblanceolatæ, ad 2 poll. longæ, venosæ, graciliter petiolatæ, petiolo 3–4 lineas longo, apice 2-glanduloso; calycis sepala 4, decussata, orbicularia, ciliolata; antheræ 2, interdum 3.

SALVADOR, Acajutla (*S. Hayes*, 617). Hb. Kew.

Notwithstanding the differences indicated, this may be no more than a form of our *O. oleifera*; yet we cannot venture to unite them.

2. **Omphalea diandra,** Linn., var. **panamensis,** Kl. in Seem. Bot. Voy. 'Herald,' p. 101; DC. Prodr. xv. 2, p. 1135.

PANAMA, Isle of Coiba (*Seemann*, 635), Lion Hill station (*S. Hayes*, 660). Hb. Kew.

Typical *O. diandra* is widely dispersed in South America and the West Indies.

3. **Omphalea oleifera,** Hemsley in Pharmac. Journ. & Trans. 1882, p. 301.

Foliis amplis fere orbicularibus profunde cordatis stellato-puberulis, paniculis brevibus ramosis, bracteis paucis infra pollicaribus, ovario glabro.

Arbor?, ramulis ultimis inflorescentias gerentibus crasso-carnosis. *Folia* (unicum, circiter 5 poll. diametro, a nobis tantum visum) petiolata, tenuia, papyracea, sparse stellato-puberula, pilis deciduis, suborbicularia, profunde cordata ("ampla, lenta," *Doratius*), venis primariis lateralibus utrinque 5–6, conspicuis; petiolus in spec. nost. omnino deest. *Flores* monoici, paniculati; paniculæ terminales, latæ, ramosæ, puberulæ; bracteæ paucæ, petiolatæ, angustæ, oblongæ, vix 1 poll. longæ, venosæ, puberulæ; calycis sepala in fl. ♂ ut in fl. ♀ 4, decussata, orbicularia, ciliolata; antheræ 2; ovarium glabrum. "*Fructus* magnitudine pyri, 3-spermus; semina nigra, oleum gratum purgativum copiose præbentia" (*Doratius*).

SALVADOR, Sonsonate (*Dorat*). Hb. Kew.

This is the *Tambor* of the natives; and, according to Dr. Dorat, it yields large quantities of a very fine oil, rather pleasant to the taste, and resembling castor-oil in its purgative properties, with the advantage that its action is painless.

28. HIPPOMANE.

Hippomane, Linn. Gen. Plant. n. 1088; Benth. et Hook. Gen. Plant. iii. p. 333.

An arboreous monotype.

1. **Hippomane mancinella,** Linn. Sp. Pl. p. 1431; DC. Prodr. xv. 2, p. 1200; Jacq. Amer. t. 159; Baill. Etud. Gén. Euphorb. t. 6. figg. 12–20.

FLORIDA.—SOUTH MEXICO, San Augustin on the Pacific and Vera Cruz (*Liebmann*);

Guatemala (*Friedrichsthal*); Costa Rica (*Hoffmann*); Panama (*Seemann*).—Western coast of Tropical South America and the West Indies. Hb. Kew.

29. STILLINGIA.

Stillingia, Linn. Mant. n. 1279; Benth. et Hook. Gen. Plant. iii. p. 334.

Fourteen shrubby species are enumerated. They inhabit America and the Mascarene and Pacific Islands.

1. **Stillingia acutifolia,** Benth. et Hook. f. Gen. Pl. iii. p. 334.

Gymnostillingia acutifolia, Müll. Arg. in Linnæa, xxxii. p. 90, et in DC. Prodr. xv. 2, p. 1163.
Sapium acutifolium, Benth. Pl. Hartw. p. 90.

South Mexico, Jalapa (*Coulter*, 1503); Guatemala, Hacienda de Argueta (*Hartweg*, 614), Volcan de Fuego, at 8300 feet (*Salvin*). Hb. Kew.

2. **Stillingia appendiculata,** Müll. Arg. in Linnæa, xxxii. p. 87, et in DC. Prodr. xv. 2, p. 1159.

Mexico (hb. *Pavon*).

3. **Stillingia macrantha,** Benth. et Hook. f. Gen. Plant. iii. p. 344.

Gymnostillingia macrantha, Müll. Arg. in Linnæa, xxxii. p. 90, et in DC. Prodr. xv. 2, p. 1163; Baill. Adansonia, xi. p. 126.

Mexico (hb. *Pavon; Ghiesbreght*?).

4. **Stillingia sanguinolenta,** Müll. Arg. in Linnæa, xxxii. p. 88, et in DC. Prodr. xv. 2, p. 1159.

α. **lanceolata,** Müll. Arg. loc. cit.

Mexico (*Ehrenberg*; hb. *Pavon*).

β. **angustifolia,** Müll. Arg. loc. cit. p. 1160.

South Mexico, Caracol de Atolon (*Schiede*?).

5. **Stillingia sylvatica,** Linn. Mant. p. 126; DC. Prodr. xv. 2, p. 1158 (varietates); A. Gr. Man. Bot. N. U. S. ed. 5, p. 436.

Virginia southward to Florida and Texas.—North Mexico, Guajuco (*Palmer*, 1255); South Mexico, Zimapan (*Coulter*, 1501, 1502), plain of Octopan (*Graham*, 311). Hb. Kew.

6. **Stillingia zelayensis,** Müll. Arg. in Linnæa, xxxii. p. 87, et in DC. Prodr. xv. 2, p. 1159.

Sapium zelayense, H. B. K. Nov. Gen. et Sp. ii. p. 65.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 823); South Mexico, Jalapa (*Coulter*, 1490), near Zelaya (*Humboldt & Bonpland*); Panama, Boquete (*Seemann*, 1254). Hb. Kew.

30. SAPIUM.

Sapium, P. Br. Hist. Jam. p. 338; Benth. et Hook. Gen. Plant. iii. p. 334.

A genus of about twenty-five shrubby and arboreous species, widely diffused in the hotter regions.

1. **Sapium biglandulosum,** Müll. Arg. in Linnæa, xxxii. p. 116.

Excæcaria biglandulosa, Müll. Arg. in DC. Prodr. xv. 2, p. 1204.
Stillingia biglandulosa, Baill. Adansonia, v. p. 320.
Hippomane biglandulosa, Linn. Sp. Pl. p. 1431.

β. **pavonianum,** Müll. Arg. in Linnæa, xxxii. p. 116.

South Mexico, Vera Cruz (*Müller*), without locality (hb. *Pavon*).

ε. **klotzschianum,** Müll. Arg. loc. cit. p. 117.

Excæcaria biglandulosa ζ. klotzschiana, Müll. Arg. in DC. Prodr. xv. 2, p. 1205.

Mexico (hb. *Pavon*); Guatemala (*Friedrichsthal*).—Brazil. Hb. Kew.

λ. **moritzianum,** Müll. Arg. in Linnæa, xxxii. p. 119; Kl. in Seem. Bot. Voy. 'Herald,' p. 100 (species).

Excæcaria biglandulosa ξ. moritziana, Müll. Arg. in DC. Prodr. xv. 2, p. 1207.

Panama, southern parts of the province (ex *Seemann*), Frijoli station (*S. Hayes*, 709).—Colombia. Hb. Kew.

Müller defines fourteen other varieties, which are spread over South America from Venezuela and Colombia to Peru, Guiana, and Brazil.

31. SEBASTIANA.

Sebastiana, Spreng. Neue Entdeck. ii. p. 118, t. 3; Benth. et Hook. Gen. Plant. iii. p. 336.

Shrubs, usually slender, with a few herbaceous species. There are about forty species, one of which inhabits the tropics of the Old World, one the Southern States of North America, whilst the rest are natives of Tropical America and chiefly of Brazil, one of these recurring in western Tropical Africa.

1. **Sebastiana treculiana,** Müll. Arg. in DC. Prodr. xv. 2, p. 1165.

Gymnanthes treculiana, Müll. Arg. in Linnæa, xxxiv. p. 216.
Sapium ? *annuum β. bidentatum*, Torr. Bot. U.S. & Mex. Bound. Surv. p. 201 ?

Texas.—North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*, 65). Hb. Kew.

This should perhaps be referred to the next genus.

32. GYMNANTHES.

Gymnanthes, Sw. Prodr. Fl. Ind. Occ. p. 95; Benth. et Hook. Gen. Plant. iii. p. 337.

About ten shrubby species, inhabiting the West Indies and Tropical America.

1. **Gymnanthes actinostemoides,** Müll. Arg. in Linnæa, xxxii. p. 103.

Sebastiania actinostemoides, Müll. Arg. in DC. Prodr. xv. 2, p. 1184.

South Mexico, Zacuapan at 1800 feet (*Linden*, 1357), Mirador (*Liebmann*), Cordillera of Vera Cruz at 2500 feet (*Galeotti*, 3740). Hb. Kew.

2. **Gymnanthes longipes,** Müll. Arg. in Linnæa, xxxiv. p. 216.

Sebastiania longipes, Müll. Arg. in DC. Prodr. xv. 2, p. 1184.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

3. **Gymnanthes riparia,** Kl. in Erichs. Archiv, 1841, vii. p. 182.

Gymnanthes schlechtendaliana, Müll. Arg. in Linnæa, xxxii. p. 100.

Excæcaria riparia, Schl. in Linnæa, vii. p. 386.

Sebastiania schlechtendaliana, Müll. Arg. in DC. Prodr. xv. 2, p. 1181.

South Mexico, on the banks of rivers near Jalapa &c. (*Schiede*).

33. DALEMBERTIA.

Dalembertia, Baill. Etud. Gén. Euphorb. p. 545, t. 5, et Adansonia, xi. p. 124; Benth. et Hook. Gen. Plant. iii. p. 339.

Undershrubs, restricted to Mexico.

1. **Dalembertia hahniana,** Baill. Adansonia, xi. p. 125.

South Mexico, Xochialco (*Hahn*).

2. **Dalembertia platanoides,** Baill. Adansonia, xi. p. 124.

South Mexico, Cordillera of Vera Cruz at 4000 feet (*Galeotti*, 3754). Hb. Kew.

3. **Dalembertia populifolia,** Baill. Etud. Gén. Euphorb. p. 546, t. 5. figg. 11–15; DC. Prodr. xv. 2, p. 1225.

South Mexico, Tehuantepec (*Andrieux*, 107), without locality (hb. *Pavon*).

4. **Dalembertia triangularis,** Müll. Arg. in Linnæa, xxxiv. p. 218, et in DC. Prodr. xv. 2, p. 1225.

Mexico (hb. *Pavon*).

34. HURA.

Hura, Linn. Gen. Plant. n. 1087; Benth. et Hook. Gen. Plant. iii. p. 339.

Two arboreous species.

1. **Hura crepitans,** Linn. Sp. Pl. p. 1431; DC. Prodr. xv. 2, p. 1229 (varietates); Descour. Fl. Antill. t. 124; Mart. Fl. Bras. xi. 2, t. 86; Baill. Etud. Gén. Euphorb. t. 6.

Guatemala (*Skinner*).—Widely dispersed in Tropical America and the West Indies, and cultivated in many other countries. Hb. Kew.

2. **Hura polyandra,** Baill. Etud. Gén. Euphorb. p. 543; DC. Prodr. xv. 2, p. 1229.

South Mexico, between Tehuantepec and Boca del Monte (*Andrieux*, 99); Guatemala (ex *Baillon*).

[The Balanopseæ are a small order of one genus and six or seven species, endemic in New Caledonia.]

Order CXXVII. URTICACEÆ.

Urticaceæ, Benth. et Hook. Gen. Plant. iii. p. 341.

This order comprises upwards of 1500 species referred to 108 genera, and it is represented in all tropical and temperate regions.

Tribe I. ULMEÆ.

Ulmeæ, Benth. et Hook. Gen. Plant. iii. p. 343.

Four genera, three of which are monotypic; and one of these is endemic in Brazil: the rest are confined to the northern hemisphere.

1. ULMUS.

Ulmus, Linn. Gen. Plant. n. 316; Benth. et Hook. Gen. Plant. iii. p. 351.

About sixteen arboreous species, widely dispersed in the temperate regions of the northern hemisphere—one occurring in the subtropical region of Sikkim, and the following on the mountains within the tropics.

1. **Ulmus mexicana,** Planch. in DC. Prodr. xvii. p. 156.

Chætoptelea mexicana, Liebm. in Vidensk. Meddel. 1850, pp. 74–78, et in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 336 (reprint, p. 52).

South Mexico, Mirador at 3000 feet (*Liebmann*), Orizaba (*Botteri*, 878, 1164; *Sumichrast*, 871). Hb. Kew.

Tribe II. CELTIDEÆ.

Celtideæ, Benth. et Hook. Gen. Plant. iii. p. 343.

Nine genera, comprising nearly 120 species, spread over nearly the whole area of the order.

2. CELTIS.

Celtis, Linn. Gen. Plant. n. 1143; Benth. et Hook. Gen. Plant. iii. p. 354.

Shrubs and trees, inhabiting the temperate and tropical regions of both hemispheres, but chiefly the northern. Seventy species are enumerated, though Bentham and Hooker estimate there are scarcely fifty distinct ones.

1. **Celtis aculeata,** Sw. Prodr. p. 53, et Fl. Ind. Occ. i. p. 545; DC. Prodr. xvii. p. 186.

Rhamnus iguaneus, Linn.; Cav. Ic. Pl. iii. p. 48, t. 94.
Zizyphus iguanea, Lam. Dict. iii. p. 318.
Mertensia iguanea et *M. commutata,* Rœm. et Schult. Syst. Veg. vi. p. 312.
Celtis epiphylladena, Ort. Dec. p. 79.
Momisia ehrenbergiana, Kl. in Linnæa, xx. p. 538.
Celtis ehrenbergiana, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 339.

South Mexico, Papantla (*Liebmann*), without locality (*Ehrenberg; Ortega*); Panama, Paraiso (*S. Hayes*, 640).—Venezuela and Colombia to Peru, and in the West Indies. Hb. Kew.

β. **lævigata,** Planch. in DC. Prodr. xvii. p. 187.

Mertensia lævigata, H. B. K. Nov. Gen. et Sp. ii. p. 31, t. 103.

Celtis orthacanthus, Planch. in Ann. Sc. Nat. sér. 3, x. p. 308.

South Mexico, Campeachy (*Humboldt & Bonpland*).—Peru; Brazil.

2. **Celtis alba,** Rafin. Fl. Ludov. p. 25; DC. Prodr. xvii. p. 177.

Louisiana; Texas.—New Spain (hb. *Pavon*)?

3. **Celtis (Momisia) anfractuosa,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 338.

South Mexico, Xalcomulco, Vera Cruz (*Liebmann*).

4. **Celtis berlandieri,** Kl. in Linnæa, xx. p. 541; DC. Prodr. xvii. p. 178.

Celtis texana, Scheele in Linnæa, xxii. p. 146.

Texas.—North Mexico, Monterey (*Palmer*, 1261), Matamoros (*Berlandier*). Hb. Kew.

5. **Celtis caudata,** Planch. in Ann. Sc. Nat. sér. 3, x. p. 294, et in DC. Prodr. xvii. p. 178.

Celtis littoralis, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 337.

South Mexico, Zimapan (*Coulter*, 1492), San Augustin, Oaxaca (*Liebmann*), Aculejo (*Hahn*). Hb. Kew.

6. **Celtis monoica,** Hemsley, n. sp. (Tab. LXXVII.)

Inermis, foliis penninerviis lanceolatis mucronatis supra nitidis, floribus omnibus in ramulis foliiferis, floribus fertilibus solitariis brevissime pedicellatis femineis, staminodiis nullis, ovario hirsuto.

Arbor vel *frutex* inermis (sempervirens?), ramis gracilibus, minute denseque lenticellatis, ramulis ultimis appresse pilosulis. *Folia* breviter petiolata, subcoriacea, lanceolata, 1½–4 poll. longa, aculeolato-acuminata, basi rotundata, sæpe remotissime serrulata, prominenter penninervia, supra glaberrima, nitida, subtus plus minusve appresse pilosula; petiolus sæpissime 2–3 lineas longus. *Flores masculini* breviter fasciculato-racemosi, fasciculis axillaribus; perianthii 5-partiti segmenta inæqualia, suborbicularia, extus pilosula; stamina 5, segmentis opposita. *Flores feminei* in axillis foliorum superiorum solitarii, brevissime pedicellati; perianthii segmenta oblongo-orbicularia, extus pilosula; stamina et staminodia nulla; ovarium hirsutum, stigmatibus indivisis. *Fructus* a nobis non visus.

South Mexico, near Tantoyuca, Huasteca (*Ervendberg*, 321). Hb. Kew.

EXPLANATION OF TAB. LXXVII.

Fig. 1, a male flower, partially open; 2, ditto, fully open; 3, a stamen; 4, a female flower; 5, an ovary: all enlarged.

7. **Celtis tala,** Gillies in Ann. Sc. Nat. sér. 3, x. p. 310; Planch. in DC. Prodr. xvii. p. 190?

North Mexico, Monterey, Nuevo Leon (*Eaton & Edwards*, 107, 108). Hb. Kew.

Planchon defines several varieties of *C. tala* from Brazil and Bolivia, and one, the *C. pallida*, Torr. Bot. U.S. & Mex. Bound. Surv. p. 203, from Texas and North Mexico, which is probably our plant.

3. TREMA.

Trema, Lour. Fl. Cochinch. 562; Benth. et Hook. Gen. Plant. iii. p. 355; Bl. Mus. Bot. Lugd. Bat. ii. p. 58.
Sponia, Comm., ex Dcne. Herb. Tim. Descr. p. 170, et Planch. in DC. Prodr. xvii. p. 195.

Between twenty and thirty shrubby and arboreous species, widely dispersed in tropical countries.

1. **Trema micrantha**, Bl. Mus. Bot. Lugd. Bat. ii. p. 58.

Sponia micrantha, Dcne., ex Planch. in Ann. Sc. Nat. sér. 3, x. p. 333, et in DC. Prodr. xvii. p. 203.
Celtis micrantha, Sw. Prod. p. 53, et Fl. Ind. Occ. i. p. 547.
Rhamnus micranthus, Linn. Amœn. Acad. v. p. 395.
Sponia canescens, Dcne., et *S. schiedeana*, Dcne., ex Planch. in Ann. Sc. Nat. sér. 3, x. p. 330.
Sponia grisea, Liebm., et *S. crassifolia*, Liebm.? in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 340 (reprint, p. 56).
Celtis schiedeana, Schl. in Linnæa, vii. p. 140.
Celtis canescens, H. B. K. Nov. Gen. et Sp. ii. p. 28.
Trema canescens, Bl., et *T. schiedeana*, Bl. Mus. Bot. Lugd. Bat. ii. p. 58.

A very common tree throughout TROPICAL AMERICA and the WEST INDIES. Hb. Kew. There are many other synonyms relating to forms found outside of our limits.

[*Sponia? integerrima*, Beurling in Kong. Vetensk. Akad. Handl. 1854, p. 144, from Panama, is a doubtful plant.]

Tribe III. CANNABINEÆ.

Cannabineæ, Benth. et Hook. Gen. Plant. iii. p. 344.

This tribe consists of two genera and three species, namely:—*Humulus lupulus*, Linn. (the Hop), and *Cannabis sativa*, Linn. (Hemp), both of which are widely cultivated and now naturalized in many countries, including Mexico; and a second species of *Humulus*, a native of China and Japan.

Tribe IV. MOREÆ.

Moreæ, Benth. et Hook. Gen. Plant. iii. p. 344.

This tribe consists almost exclusively of trees and shrubs. It comprises twenty-three genera, the majority of which are monotypic, and not one of them, except *Dorstenia*, counts more than six species. The species are dispersed over nearly the whole area of the order; but the majority inhabit tropical regions or mountains within the tropics.

4. CHLOROPHORA.

Chlorophora, Gaud. in Freyc. Voy. Bot. p. 509; Benth. et Hook. Gen. Plant. iii. p. 363.

Two arboreous species, the second a native of Tropical Africa.

1. **Chlorophora tinctoria,** Gaud. in Freyc. Voy. Bot. p. 508, in nota.

Maclura tinctoria, D. Don in Steud. Nomencl. Bot. 1841; Bl. Mus. Bot. Lugd. Bat. ii. p. 83; DC. Prodr. xvii. p. 228.

a. **subintegerrima,** Bureau in DC. Prodr. xvii. p. 228, sub *Maclura*; Miq. in Mart. Fl. Bras. iv. 1, p. 157 (species).

Maclura velutina, Bl. Mus. Bot. Lugd. Bat. ii. p. 82.
Morus tinctoria, Linn. Syst. Nat. ed. 10, ii. p. 1266.

Mexico (*Moçino & Sessé*).—West Indies; Peru.

γ. **chlorocarpa,** Bureau, loc. cit. p. 229, sub *Maclura*; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 314 (species).

Broussonetia tinctoria a, H. B. K. Nov. Gen. et Sp. ii. p. 32.

South Mexico, Tlacotalpan (*Hahn*), Papantla, and between Jalapa and Mirador (*Liebmann*), Campeachy (*Linden*).—Venezuela and Colombia to Peru.

ζ. **xanthoxylon,** Bureau, loc. cit. p. 230, sub *Maclura*; Endl. Gen. Pl. Suppl. iv. 2, p. 34 (species); Mart. Fl. Bras. iv. 1, t. 53.

Maclura plumiera, D. Don, ex Steud. Nomencl. Bot. 1841; Bl. Mus. Bot. Lugd. Bat. ii. p. 82.
Maclura sieberi, Bl. loc. cit. p. 83.
Morus xanthoxylon, Linn. Syst. Nat. ed. 10, ii. p. 1266.

South Mexico, Vera Cruz (*Schiede*); Panama (*Duchassaing*).—Southward to Peru and Brazil, and in the West Indies.

Several other varieties are described, all inhabiting parts of the same region.

5. MORUS.

Morus, Linn. Gen. Plant. n. 1055; Benth. et Hook. Gen. Plant. iii. p. 364; Bureau in DC. Prodr. xvii. p. 237.

Trees and shrubs. Ten or twelve species have been described; but Bureau reduces them to five.

1. **Morus celtidifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 33; DC. Prodr. xvii. p. 246.

Morus mexicana, Benth. Pl. Hartw. p. 71.

South Mexico, Tehuacan (*Hartweg*), mountains above Guadalupe (*Bourgeau,* 189), Orizaba (*Sumichrast,* 1336, 1337); Guatemala (*Savage*).—Colombia to Peru. Hb. Kew.

[*Morus rubra,* Linn., is stated by Bureau in DC. Prodr. xvii. p. 246, to range from Canada to Mexico; but the locality, Rio Guadalupe, given as Mexican, is really in Texas.]

6. TROPHIS.

Trophis, Linn. Gen. Plant. n. 1103; Benth. et Hook. Gen. Plant. iii. p. 365.

About five or six shrubby and arboreous species, inhabiting the West Indies, Mexico, and the Andes of South America.

1. **Trophis americana,** Linn. Amœn. Acad. v. p. 410.

β. **ramon,** Bureau in DC. Prodr. xvii. p. 252; Cham. et Schl. in Linnæa, vi. p. 357 (species); Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 315 (reprint, p. 31).

South Mexico, between Guatulco and San Miguel del Puerto, Oaxaca, Trapiche de la Concepcion, and Rio de las Vueltas, Oaxaca (*Liebmann*), Mirador (*Linden*, 34), Jalapa (*Galeotti*); Panama, Isle of Taboga (*S. Hayes*, 658). Hb. Kew.

The typical form of this species inhabits Cuba, Jamaica, and San Domingo, whilst a third form occurs in Colombia.

2. **Trophis mexicana,** Bureau in DC. Prodr. xvii. p. 253. (Tab. LXXVIII.)

Sorocea mexicana, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 335 (reprint, p. 51).

South Mexico, Huatusco (*Heller*), Orizaba (*Botteri*, 1014), Zacualpan (*Linden*, 1647), Sierra San Pedro Nolasco &c. (*Jurgensen*, 941), Hacienda de Jovo, Vera Cruz (*Liebmann*). Hb. Kew.

EXPLANATION OF TAB. LXXVIII.

Trophis mexicana, Bureau, and *Sorocea affinis,* Hemsley, were both drawn for this work on account of their foliage being so much alike that the two plants have been confused. In fact the former was referred to *Sorocea* by Liebmann; and in consequence of this synonym appearing on the sheet bearing the specimen, the artist mistook the analyses when transferring them to the stone. The branches bearing respectively male and female flowers are true *Trophis mexicana.* Fig. 1 is a bud of a male flower of *Sorocea affinis,* to show the imbricate æstivation; 2, a male flower of the same, just expanded, showing the straight filaments; 3, a female flower of *Trophis mexicana*; 4, the same, further advanced: all the dissections enlarged.

See the explanation of Tab. LXXIX. (*Sorocea affinis*), p. 150.

3. **Trophis glabrata,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 314 (reprint, p. 30); DC. Prodr. xvii. p. 254.

South Mexico, Mirador, Villa Alta, Chinantla, &c. (*Liebmann*). Hb. Kew.

7. DORSTENIA.

Dorstenia, Linn. Gen. Plant. n. 158; Benth. et Hook. Gen. Plant. iii. p. 366.

Perennial herbs or small shrubs. Forty-five species are published, one of which inhabits India and the rest Tropical Africa and America.

1. **Dorstenia contrajerva,** Linn. Sp. Pl. ed. 2, p. 176; DC. Prodr. xvii. p. 259; Jacq. Ic. Pl. Rar. iii. t. 614; Descour. Fl. Antill. iii. t. 207; H. B. K. Nov. Gen. et Sp. ii. p. 45.

Dorstenia houstoni, Lodd. Bot. Cab. t. 1005, non Linn.

South Mexico, Misantla (*Hahn*), Huasteca (*Ervendberg*), Jalapa (*Linden*), Cordillera of Vera Cruz at 2400 to 4500 feet (*Galeotti*, 290).—Venezuela to Peru, and in the West Indies. Hb. Kew.

β. **houstoni,** Bureau in DC. Prodr. xvii. p. 259; Linn. Sp. Pl. ed. 2, p. 176 (species); Bot. Mag. t. 2017.

South Mexico, Vera Cruz (*Houston; Liebmann*), Teapa, Tabascc and Consoquitla (*Linden*, 38, 63), Cordillera of Vera Cruz at 2500 to 3000 feet (*Galeotti*, 291). Hb. Kew.

γ. **maculata,** Bureau in DC. Prodr. xvii. p. 260.

South Mexico, Mirador (*Ghiesbreght*).

2. **Dorstenia drakena,** Linn. Sp. Pl. ed. 2, p. 176; DC. Prodr. xvii. p. 260.

Dorstenia mexicana, Benth. Pl. Hartw. p. 51.

South Mexico, Morelia (*Hartweg*), without locality (*Parkinson*); Nicaragua, neighbourhood of Granada (*Lévy*).—Peru. Hb. Kew.

3. **Dorstenia excentrica,** Moric. Pl. Nouv. d'Am. p. 92, t. 59; DC. Prodr. xvii. p. 263.

South Mexico, Tampico (*Berlandier*), Tantoyuca, Huasteca (*Ervendberg*).

4. **Dorstenia lindeniana,** Bureau in DC. Prodr. xvii. p. 269.

South Mexico, Teapa, Tabasco (*Linden*, 64). Hb. Kew.

Tribe V. ARTOCARPEÆ.

Artocarpeæ, Benth. et Hook. Gen. Plant. iii. p. 346.

Trees or shrubs. Twenty-two genera, numbering about 710 species, generally diffused in tropical regions, a very few occurring in temperate regions.

8. FICUS.

Ficus, Linn. Gen. Plant. n. 1168; Benth. et Hook. Gen. Plant. iii. p. 367.

This genus comprises upwards of 600 species, spread over all tropical countries, but most abundant in the Malayan Archipelago. A very few extend into temperate regions in Japan, South Africa, and in the countries bordering the Mediterranean. In America the genus is not represented north of Mexico, and barely south of the tropic of Capricorn.

1. **Ficus anthelmintica,** Mart. Syst. Mat. Med. Bras. p. 88.

Pharmacosycea anthelmintica, Miq. in Hook. Lond. Journ. Bot. vii. p. 66, in Seem. Bot. Voy. 'Herald,' p. 195, et in Mart. Fl. Bras. iv. 1, t. 25. fig. 2.

Ficus glabrata, H. B. K. Nov. Gen. et Sp. ii. p. 47.

Panama (*Seemann*).—Colombia; Brazil.

2. **Ficus arbutifolia,** Link, Enum. Pl. Hort. Berol. ii. p. 450; Kth. et Bouché, Ind. Sem. Hort. Berol. 1846, p. 19; Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 412, et in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 63.

South Mexico, Papantla (*Schiede & Deppe*).

3. **Ficus baccata,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 106.

Urostigma baccatum, Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 327 (reprint, p. 43).

South Mexico, Hacienda de Santa Cruz, near Tehuantepec, Oaxaca (*Liebmann*).

4. **Ficus bonplandiana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 38.

Urostigma bonplandianum, Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 323 (reprint, p. 39).

Ficus obtusifolia, H. B. K. Nov. Gen. et Sp. ii. p. 49, nec alior.

South Mexico, Acapulco (*Humboldt & Bonpland*), Mirador (*Liebmann*).

5. **Ficus botryapioides,** Kth. et Bouché, Ind. Sem. Hort. Berol. 1846, p. 15.

Urostigma botryapioides, Miq. in Hook. Lond. Journ. Bot. vi. p. 538, et in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 79.

Mexico.

6. **Ficus chiriquiana,** Miq. in. Ann. Mus. Bot. Lugd. Bat. p. 298. n. 73.

Urostigma chiriquianum, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 412.

Panama, Volcan de Chiriqui (*Warscewicz*).

7. **Ficus complicata,** H. B. K. Nov. Gen. et Sp. ii. p. 48.

Urostigma complicatum, Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 325 (reprint, p. 41).

South Mexico, western Cordillera near Guasintla and Puente de Istla at 3000 feet (*Humboldt & Bonpland*).

8. **Ficus consanguinea,** Kth. et Bouché, Ind. Sem. Hort. Berol. 1846, p. 17; Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 74.

Urostigma consanguineum, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 408.

South Mexico, between Sepillo and Estura (ex *Miquel*).

9. **Ficus costaricana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 48.

Urostigma costaricanum, Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 322 (reprint, p. 38).

Costa Rica, Pitayaya (*Œrsted*).

10. **Ficus cotinifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 49.

Urostigma cotinifolium, Miq. in Hook. Lond. Journ. Bot. vi. p. 530; Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 322.

South Mexico, on the Acapulco road near Venta del Exido, 1200 feet (*Humboldt & Bonpland*), near Tehuantepec, Oaxaca (*Liebmann*). Hb. Kew.

11. **Ficus coybana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 300. n. 138.

Pharmacosycea rigida, Miq. in Seem. Bot. Voy. 'Herald,' p. 195.

Panama, island of Coiba, coast of Panama (*Seemann*). Hb. Kew.

12. **Ficus eugeniæfolia,** Hemsley.

Urostigma eugeniæfolium, Liebm. in K. Dansk. Videnск. Selsk. Skrift. ser. 5, ii. p. 329.

Costa Rica, Ujaras (*Œrsted*).

13. **Ficus fuscescens,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 34.
Urostigma fuscescens, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 329 (reprint, p. 45).
South Mexico, Colipa, Vera Cruz (*Liebmann*).

14. **Ficus glauca,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 99.
Urostigma glaucum, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, iii. p. 322.
South Mexico, Rio de las Vueltas, Oaxaca (*Liebmann*).

15. **Ficus glaucescens,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 300. n. 136.
Pharmacosycea glaucescens, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 322 (reprint, p. 48).
South Mexico, Mecapalco and Potrero de Consoquitla, near Mirador (*Liebmann*), region of Orizaba (*Bourgeau*, 2249 bis). Hb. Kew.

16. **Ficus glycicarpa,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 17.
Urostigma glycicarpum, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 409.
South Mexico, Hacienda de la Laguna (*Schiede*).

17. **Ficus guatemalana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 39.
Urostigma guatemalanum, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 411.
Guatemala (*Warscewicz*).

18. **Ficus gummifera,** Bertol. Misc. Bot. fasc. xx. p. 16, t. 5, non Miq.
Guatemala, Esquintla (*Velasquez*).
This name is not taken up by Miquel in his enumeration of the American species of *Ficus*.

19. **Ficus hernandezii,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 300. n. 137.
Pharmacosycea hernandezii, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 332 (reprint, p. 48).
South Mexico, Papantla (*Liebmann*). Hb. Kew.

20. **Ficus intramarginalis,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 18.
Urostigma intramarginale, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 320 (reprint, p. 36).
Costa Rica, Turrialva (*Œrsted*).

21. **Ficus involuta,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 47.
Urostigma involutum, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 320 (reprint, p. 36).
Nicaragua, between Sapoa and Tortuga (*Œrsted*).

22. **Ficus lancifolia,** Hook. et Arn. Bot. Beech. Voy. p. 310.
Urostigma lancifolium, Miq. in Hook. Lond. Journ. Bot. vi. p. 538; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 326 (reprint, p. 42).
South Mexico, without locality (*Beechey*), Orizaba (*Botteri*, 577); Costa Rica, Cartago (*Œrsted*).

23. **Ficus lapathifolia,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 19.

Urostigma lapathifolium, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 319 (reprint, p. 35).

South Mexico, Colipa &c., Vera Cruz (*Liebmann*); Guatemala (*Skinner*). Hb. Kew.

24. **Ficus liebmanniana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 68.

Urostigma liebmannianum, Miq. in Seem. Bot. Voy. 'Herald,' p. 195.

Panama, Chagres (*Seemann*). Hb. Kew.

25. **Ficus ligustrina,** Kth. et Bouché, Ind. Sem. Hort. Berol. 1846, p. 16; Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 56.

Urostigma schiedeanum, Miq. in Hook. Lond. Journ. Bot. vi. p. 539; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 326 (reprint, p. 42).

Ficus prinoides, Cham. et Schl. in Linnæa, vi. p. 357, non Willd.

South Mexico, region of Orizaba (*Müller*, 866; *Bilimek*, 355), Mirador, Maloapam, Papantla, Consoquitla, and Trapiche de la Concepcion (*Liebmann*). Hb. Kew.

26. **Ficus longipes,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 23.

Urostigma longipes, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 321 (reprint, p. 37).

South Mexico, Colipa and Misantla, Vera Cruz (*Liebmann*). Hb. Kew.

27. **Ficus mexicana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 135.

Pharmacosycea mexicana, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 415.

South Mexico (*Schiede*).

28. **Ficus myxæfolia,** Kth. et Bouché, Ind. Sem. Hort. Berol. 1846, p. 18; Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 22.

Urostigma myxæfolium, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 410.

South Mexico.

[*Urostigma nummularia,* Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, iii. p. 330, from Mexico, is, according to Miquel in Ann. Mus. Bot. Lugd. Bat. iii. p. 299, a spurious species founded upon sterile branches of something else.]

29. **Ficus nymphæifolia,** Linn. Mant. p. 305.

Urostigma nymphæifolium, Miq. in Hook. Lond. Journ. Bot. vi. p. 527, et in Ann. Mus. Bot. Lugd. Bat. iii. p. 297. n. 1.

South Mexico, Mazatlan (*Seemann*, 1459)?—South America. Hb. Kew.

30. **Ficus œrstediana,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 107.

Urostigma œrstedianum, Miq. in Seem. Bot. Voy. 'Herald,' p. 196, t. 36.

Panama, David (*Seemann*, 1158). Hb. Kew.

31. **Ficus ovalis,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 67.

Urostigma ovale, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 324 (reprint, p. 40).

Costa Rica, Guanacaste (*Œrsted*).

32. **Ficus padifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 47.

Urostigma padifolium, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 324.

South Mexico, Acapulco (*Humboldt & Bonpland*).

33. **Ficus petiolaris,** H. B. K. Nov. Gen. et Sp. ii. p. 49; Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 97.

Urostigma petiolare, Miq. in Hook. Lond. Journ. Bot. vi. p. 527; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 321 (reprint, p. 37).

South Mexico, Mazatlan, Acaguisotla (*Humboldt & Bonpland*), Acapulco and Cuernavaca (ex *Liebmann*).

34. **Ficus populnea,** Willd. Sp. Pl. p. 1141.

Urostigma populneum, Miq. in Hook. Lond. Journ. Bot. vi. p. 537, et in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 66.

Mexico (*Beechey*)?—West Indies. Hb. Kew.

35. **Ficus protensa,** Hemsley.

Urostigma protensum, Griseb. in Bonplandia, 1858, p. 4.

Panama (*Duchassaing*).

36. **Ficus pseudoradula,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 134.

Pharmacosycea pseudoradula, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 414.

South Mexico, near Papantla (ex *Miquel*).

37. **Ficus radula,** Willd. Sp. Pl. iv. p. 1114; H. B. K. Nov. Gen. et Sp. ii. p. 47.

Pharmacosycea radula, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 414; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 331.

South Mexico, San Augustin, Oaxaca (*Liebmann*)?; Panama (*Seemann*)?—Guiana; Brazil.

38. **Ficus sapida,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 65.

Urostigma sapidum, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 327 (reprint, p. 43); Seem. Bot. Voy. 'Herald,' p. 195, t. 35.

Costa Rica, Cartago (*Œrsted*); Panama, Veraguas (*Seemann*, 1157, 1573), banks of the Rio Chagres (*S. Hayes*, 696). Hb. Kew.

[*Urostigma scandens*, Liebm. (*Ficus*, Lam.) in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 330 (reprint, p. 46), from Mexico, is, according to Miquel in Ann. Mus. Bot. Lugd. Bat. iii. p. 299, a spurious species.]

39. **Ficus segoviæ,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 300. n. 144.

Pharmacosycea angustifolia, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, iii. p. 333 (reprint, p. 49).

Nicaragua, Segovia (*Œrsted*).

40. **Ficus sulcipes,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 80.
Urostigma sulcipes, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 413.
South Mexico, Atlacomulco (ex *Miquel*).

41. **Ficus tecolutensis,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 299. n. 94.
Urostigma tecolutense, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 324 (reprint, p. 40).
South Mexico, Tecoluta and Sepillo, Vera Cruz (*Liebmann*). Hb. Kew.

42. **Ficus turbinata,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 64.
Urostigma turbinatum, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 328 (reprint, p. 44).
South Mexico, around Guatulco, Oaxaca (*Liebmann*). Hb. Kew.

43. **Ficus verrucosa,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 321 (reprint, p. 37), sub *Urostigmata.*
Nicaragua (ex *Liebmann*).

44. **Ficus warscewiczii,** Miq. in Ann. Mus. Bot. Lugd. Bat. iii. p. 298. n. 37.
Urostigma warscewiczii, Miq. in Versl. en Mededeel. Kon. Akad. Amst. xiii. p. 410.
Guatemala (*Warscewicz*).

9. BROSIMUM.

Brosimum, Sw. Prodr. p. 12, et Fl. Ind. Occ. i. p. 15, t. 1; Benth. et Hook. Gen. Plant. iii. p. 369.

An exclusively American genus, consisting of about eight arboreous species, ranging from Mexico and the West Indies to Brazil.

1. **Brosimum alicastrum,** Sw. Fl. Ind. Occ. i. p. 17, t. 1; Trécul in Ann. Sc. Nat. série 3, viii. p. 139; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 334.
South Mexico, Colipa (*Liebmann*), Papantla (*Schiede*), Yucatan (*Linden*, 39).—West Indies. Hb. Kew.

2. **Brosimum costaricanum,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 334 (reprint, p. 50).
Costa Rica, Naranjo (*Œrsted*).

10. OLMEDIA.

Olmedia, Ruiz et Pav. Prodr. Fl. Peruv. et Chil. p. 129, t. 28; Benth. et Hook. Gen. Plant. iii. p. 371.

A Tropical-American genus of about six arboreous species.

1. **Olmedia aspera,** Ruiz et Pav. Prodr. Fl. Peruv. et Chil. p. 129, t. 28; H. B. K. Nov. Gen. et Sp. vii. p. 162, t. 633; Ann. Sc. Nat. série 3, viii. p. 127.
Panama, near Lion-Hill railway-station (*S. Hayes*).—Colombia to Peru. Hb. Kew.

11. PSEUDOLMEDIA.

Pseudolmedia, Tréc. in Ann. Sc. Nat. série 3, viii. p. 129, t. 5. figg. 149–157; Benth. et Hook. Gen. Plant. iii. p. 372.

About five arboreous and shrubby species, inhabiting the West Indies and Western America, from Panama to Peru.

1. **Pseudolmedia havanensis,** Tréc. in Ann. Sc. Nat. série 3, viii. p. 130; Walp. Ann. i. p. 663.

Panama, Lion-Hill railway-station (*S. Hayes*, 639).—Cuba and Colombia to Peru. Hb. Kew.

12. CASTILLOA.

Castilloa, Cervant. in Gaz. Lit. de Mexico, 1794, ex Tréc. in Ann. Sc. Nat. série 3, viii. p. 136, t. 5; Benth. et Hook. Gen. Plant. iii. p. 372.

Three arboreous species.

1. **Castilloa costaricana,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 319.

Costa Rica, Turrialva (*Ærsted*).

Probably a form of *C. elastica*.

2. **Castilloa elastica,** Cerv. in Gaz. Lit. de Mexico, 1794; Ann. Sc. Nat. série 3, viii. p. 136, t. 5. figg. 142–148; Collins, Rep. on Caoutch. of Comm. t. 2.

South Mexico, near Tantoyuca (*Ervendberg*), Hacienda de Potrero, near Cordova (*Bourgeau*, 2259); Guatemala (*Fredrichsthal*); Honduras? (ex *Collins*); Salvador, Sonsonate (*S. Hayes*); Nicaragua, neighbourhood of Granada (*Lévy*, 12); Costa Rica (ex *Collins*); Panama (ex *Collins*).—Colombia to Ecuador; Cuba; Hayti. Hb. Kew.

3. **Castilloa markhamiana,** Collins, Rep. on Caoutch. of Comm. p. 12, t. 3.

Panama, near Lion-Hill railway-station (*S. Hayes*). Hb. Kew.

13. SAHAGUNIA.

Sahagunia, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 316 (reprint, p. 32); Benth. et Hook. Gen. Plant. iii. p. 377.

Three arboreous species, the second and third inhabiting Guiana and Brazil.

1. **Sahagunia mexicana,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 316 (reprint, p. 32).

South Mexico, Mirador and Barranca de Santa Maria, Tlatetla (*Liebmann*). Hb. Kew.

[*Artocarpus incisa*, Linn., the bread-fruit, is cultivated in Panama.]

14. SOROCEA.

Sorocea, A. St.-Hil. in Mém. Mus. Par. vii. p. 473; Benth. et Hook. Gen. Plant. iii. p. 378.

An exclusively Tropical-American genus comprising about twelve shrubby and arboreous species, ranging from Mexico to Brazil.

1. **Sorocea affinis**, Hemsley, n. sp. (Tab. LXXIX.)

Aff. *S. muriculatæ*, foliis angustioribus longioribus, floribus masculis glabris breviter pedicellatis, amentis sessilibus, floribus femineis longiuscule pedicellatis, perianthio puberulo, fructu lævi.

Arbor 15–20-pedalis, ramulis glabris, gracilibus, cortice griseo, lenticellato. *Folia* breviter petiolata, subcoriacea, oblonga, 3½–7 poll. longa, caudato-acuminata, utrinque glabra, subtus pallidiora, venis primariis conspicuis, prope marginem arcuatim anastomosantibus; petiolus 1½–3 lineas longus. *Flores masculi* brevissime pedicellati, glabri; amenta sessilia, gracilia, solitaria vel 2–4-aggregata, 1–3 poll. longa; perianthii segmenta rotundata. *Flores feminei* pedicellati, puberuli; perianthium apice pulvinatum. *Fructus* sphæroideus, puberulus, haud muricatus.

Panama, near Mamei, Lion Hill, and Paraiso railway-station (*S. Hayes*, 8, 682, 684). Hb. Kew.

EXPLANATION OF TAB. LXXIX.

Fig. 1, a bud of a male flower of *Trophis mexicana*, showing the valvate æstivation; 2, a flower of the same just opened, showing the incurved stamens; 3, the same, further advanced; 4, a female flower of *Sorocea affinis*; 5, young fruit of the same: all enlarged.

For enlarged male flowers of *Sorocea affinis*, see Tab. LXXVIII. (explanation, p. 142), the male flowers of the two plants having been substituted for each other.

2. **Sorocea pubivena**, Hemsley, n. sp.

Foliis amplis oblongo-ellipticis integris subtus præcipue in venis puberulis, floribus femineis pedicellatis, fructibus puberulis.

Arbor ?, ramis graciliusculis, glabris. *Folia* breviter petiolata, subcoriacea, oblongo-elliptica, in spec. unico usque ad 10 poll. longa, basi cuneata, apice caudato-acuminata, supra glabra, costa venisque primariis depressis, subtus præcipue in costa venisque elevatis puberula; petiolus 6–8 lineas longus. *Flores* feminei racemosi, pedicellis 2–3 lineis longis haud incrassatis. *Fructus* oblongus, ad 4 lineas longus, puberulus, haud muricatus.

Guatemala (*Friedrichsthal*). Hb. Kew.

Tribe VI. CONOCEPHALEÆ.

Conocephaleæ, Benth. et Hook. Gen. Plant. iii. p. 347.

This tribe comprises six genera and about ninety shrubby and herbaceous species, upwards of seventy of which are Tropical-American. One monotypic genus, and another, of which four species are known, are restricted to Tropical Africa, and a third, of about ten species, is Asiatic.

15. CECROPIA.

Cecropia, Linn. Gen. Plant. n. 1099; Benth. et Hook. Gen. Plant. iii. p. 378.

Trees inhabiting Tropical America from Mexico to Brazil. Nearly forty species have been described, many of them, however, from very imperfect material.

1. **Cecropia commutata,** Schott, ex Miq. in Mart. Fl. Bras. iv. p. 148.

MEXICO.

2. **Cecropia humboldtiana,** Kl. in Linnæa, xx. p. 530; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 317 (reprint, p. 33).

NICARAGUA, banks of the Rio San Juan (*Ærsted*).—SOUTH AMERICA.

3. **Cecropia insignis,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 318 (reprint, p. 34).

NICARAGUA, Rio San Juan (*Ærsted*).

4. **Cecropia mexicana,** Hemsley, n. sp. (Tab. LXXX.)

Foliis 11–13-lobatis, lobis oblongis, spathis ♀ 2-spicatis (vel 4-spicatis ?), spicis sessilibus crassis ad 9 poll. longis, spathis ♂ 10–12-spicatis, spicis pedunculatis ad 6 poll. longis, perianthio 2-partito.

Arbor, ramis ? *Folia* (unicum tantum visum) longe petiolata, subcoriacea, peltata, ultra medium 11–13-lobata, supra scabrida, subtus inter venas primarias incana; lobi oblongi, margine undulati, inæquales, maximus 10 poll. longus, minimus $3\frac{1}{2}$ poll. longus, costa venisque primariis ferrugineis, subtus elevatis; petiolus sulcatus. *Spathæ* ♀ pedunculatæ, 2-spicatæ (vel 4-spicatæ ?); spicæ sessiles, fere semipoll. crassæ, ad 9 poll. longæ. *Spathæ* ♂ albo-tomentosæ, pedunculatæ (pedunculi 3-pollicares), 10–12-spicatæ; spicæ pedunculatæ (pedunculi semipollicares), graciles, ad 6 poll. longæ; perianthium bipartitum.

SOUTH MEXICO, valley of Mexico (*Bourgeau*, 1869). Hb. Kew.

Var.? Foliis omnino glabris, spicis ♂ usque ad 9 poll. longis.

NICARAGUA, Chontales (*Seemann*, 150), without locality (*Tate*, 394, in part). Hb. Kew.

The Mexican plant may be different from the Nicaraguan; but the one female spike belonging to Seemann's specimen is quite like those collected by Bourgeau, and the male spikes collected by Tate differ only in their greater length. It may be one of the species of which we have seen no specimens, all of which were described from leaves alone.

EXPLANATION OF TAB. LXXX.

Fig. 1, a male flower; 2, the same, seen from the side; 3, a stamen; 4, a female flower; 5, a vertical section of the same; 6, a seed; 7, the same, with a portion of the testa removed: all enlarged.

5. **Cecropia obtusifolia,** Bertol. Fl. Guat. p. 39; Miq. in Mart. Fl. Bras. iv. 1, p. 150.

GUATEMALA (*Velasquez*).

6. **Cecropia panamensis,** Hemsley, n. sp.

Foliis 11–12-lobatis supra scabridis subtus cinereo-puberulis, spathis ♂ graciliuscule pedunculatis 4-spicatis, spicis pedunculatis gracilibus.

Arbor, ramis ? *Folia* longe petiolata, subcoriacea, peltata, ultra medium 11–12-lobata, supra scabrida, subtus inter venas primarias cinereo-puberula; lobi oblongi, acuminati, margine undulati, inæquales, maximus 10–11 poll. longus, minimus 5 poll. longus, costa venisque ferrugineis subtus prominentibus; petiolus puberulus, sulcatus. *Spathæ* ♂ pedunculatæ, arachnoideæ,

4-spicatæ; pedunculi communes graciles, 2–4 poll. longi; spicæ pedunculatæ (pedunculi semi-pollicares), graciles, 3–6 poll. longæ.—*C. strigosa*, Miq. in Seem. Bot. Voy. 'Herald,' p. 196, non Tréc.

Panama, common in savannas all over the isthmus (*Seemann*, 499). Hb. Kew.

It is possible that Seemann collected more than one species, and that the specimens seen by Miquel belong to *C. strigosa*, Tréc., which is described as having about sixty spikes in the male spathes.

7. **Cecropia propinqua,** Miq. in Mart. Fl. Bras. iv. 1, p. 149.

Mexico.

8. **Cecropia schiedeana,** Kl. in Linnæa, xx. p. 531; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 317.

Mexico. Cultivated specimens in Kew herbarium.

16. POUROUMA.

Pourouma, Aubl. Pl. Guian. ii. p. 891, t. 341; Benth. et Hook. Gen. Plant. iii. p. 380.

An exclusively Tropical-American genus of about twenty arboreous species.

1. **Pourouma aspera,** Tréc. in Ann. Sc. Nat. sér. 3, viii. p. 102?

Panama, Lion Hill station (*S. Hayes*). Hb. Kew.

2. **Pourouma,** sp.

Nicaragua (*Tate*, 394, in part). Hb. Kew.

Tribe VII. URTICEÆ.

Urticeæ, Benth. et Hook. Gen. Plant. iii. p. 348.

This tribe includes forty genera and upwards of 500 species, spread over the whole area of the order.

17. URTICA.

Urtica, Linn. Gen. Plant. n. 1054; Benth. et Hook. Gen. Plant iii. p. 381.

About thirty herbaceous species, widely dispersed in temperate and subtropical regions.

1. **Urtica chamædryoides,** Pursh, Fl. Am. Sept. i. p. 113.

α. **genuina,** Wedd. in DC. Prodr. xvi. 1, p. 42.

Urtica verna, Rafin. in Atl. Journ. p. 16.
Urtica purpurascens, Nutt. Fl. Arkans. p. 169.
Urtica stachydifolia, Kth. et Bouché in Ann. Sc. Nat. série 3, vii. p. 181.
Urtica propinqua, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 293 (reprint, p. 9).
Urtica berlandieri, Bl. Mus. Bot. Lugd. Bat. ii. p. 151.

GEORGIA and LOUISIANA to ARKANSAS and TEXAS.—MEXICO, Chinantla, Puebla at 7000 feet (*Liebmann*). Hb. Kew.

β. **latifolia,** Wedd. loc. cit. p. 43.

Here and there with the type.

δ. **orizabæ,** Wedd. loc. cit.; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 292 (reprint, p. 8)—species.

SOUTH MEXICO, peak of Orizaba at 10,000 feet (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 1276). Hb. Kew.

"*U. bovista*, Riddell, Fl. West. States N. Am.," referred by Weddell to this species, we do not find in any of Riddell's publications.

2. **Urtica dioica,** Linn. Sp. Pl. p. 1396.

α. **vulgaris,** Wedd. in DC. Prodr. xvi. 1, p. 50; Fl. Dan. v. t. 746.

Common all over EUROPE, except Arctic, also in AFRICA, Western ASIA, and temperate and subtropical NORTH AMERICA, and in SOUTH AMERICA.

η. **mollis,** Wedd. loc. cit. p. 51.

MEXICO, at 7800 feet (*Heller*).—CHILI.

λ. **angustifolia,** Wedd. loc. cit. p. 52; Ledeb. Fl. Alt. vi. p. 240 (species).

Urtica aquatica, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 391 (reprint, p. 7).

NORTH MEXICO.—MEXICO, Chinantla, Puebla at 7000 feet (*Liebmann*).

ν. **procera,** Wedd. loc. cit. p. 52; Mühlenb. in Willd. Sp. Pl. iv. p. 353 (species).

Urtica mexicana, Bl. in Mus. Bot. Lugd. Bat. ii. p. 140, non Liebm., et *Urtica serra*, Bl. loc. cit.

Urtica dioica β. angustifolia, Schl. in Linnæa, vii. p. 141.

NORTH AMERICA.—MEXICO, around Mexico (*Bourgeau*, 188), without localities (*Berlandier*, 340, 342; *Galeotti*, 334? *Schiede*, 27). Hb. Kew.

3. **Urtica flabellata,** H. B. K. Nov. Gen. et Sp. ii. p. 40; DC. Prodr. xvi. 1, p. 41.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 528).—COLOMBIA to PERU and BOLIVIA. Hb. Kew.

4. **Urtica glandulifera,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 293 (reprint, p. 9); DC. Prodr. xvi. 1, p. 43.

SOUTH MEXICO, Hacienda de Jovo, Santa Cruz (*Liebmann*).

5. **Urtica mexicana,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 291 (reprint, p. 7); DC. Prodr. xvi. 1, p. 58.

SOUTH MEXICO, Chinantla, Puebla at 7000 feet (*Liebmann*).

6. **Urtica nicaraguensis,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5 ii. p. 292 (reprint, p. 8); DC. Prodr. xvi. 1, p. 58.

COSTA RICA, Volcan de Irazu, 8700 feet (*Œrsted*).

Liebmann gave this name believing the plant to have been collected in Nicaragua.

7. **Urtica spiralis,** Bl. Mus. Bot. Lugd. Bat. ii. p. 152; DC. Prodr. xvi. 1, p. 46.
South Mexico, Tampico to Real del Monte (*Berlandier*).

β. **? ligulata,** Wedd. in DC. Prodr. xvi. 1, p. 47.
South Mexico, Cordillera of Oaxaca at 8000 to 9000 feet, and peak of Orizaba at 10,000 feet (*Galeotti*, 314, 328). Hb. Kew.

8. **Urtica subincisa,** Benth. Pl. Hartw. p. 293; DC. Prodr. xvi. 1, p. 43.
Urtica falcicrenata, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 293.
South Mexico, near Santa Rosa (*Hartweg*), Hacienda de Santa Barbara (*Liebmann*), Jalapa (*Coulter*, 1423), near Santa Fé, valley of Mexico (*Hahn*, 641). Hb. Kew.

9. **Urtica urens,** Linn. Sp. Pl. p. 1396; DC. Prodr. xvi. 1, p. 40.
An almost ubiquitous weed in temperate and subtropical regions, including Mexico. Hb. Kew.
Probably an introduced plant in America.

18. FLEURYA.

Fleurya, Gaudich. in Freyc. Voy. Bot. p. 497, et in Voy. de la 'Bonite,' t. 83; Benth. et Hook. Gen. Plant. iii. p. 382.

Annual herbs. About eight species, widely dispersed in the tropics, and extending beyond in South Africa.

1. **Fleurya æstuans,** Gaudich. in Freyc. Voy. Bot. 497; DC. Prodr. xvi. 1, p. 71.
Widely dispersed in Tropical America, Tropical Africa, Mascarene Islands, &c.

γ. **racemosa,** Wedd. in DC. Prodr. xvi. 1, p. 72.
Fleurya cordata, Gaudich. in Freyc. Voy. Bot. p. 497, et Voy. de la 'Bonite,' t. 83.
Urtica latifolia, Rich. in Act. Soc. Hist. Nat. Par. i. p. 113; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 294 (reprint, p. 10).
Nicaragua, near Granada (*Œrsted*), Chontales (*Seemann*); Panama (*Seemann*).—Venezuela to Peru and Brazil, and in the West Indies. Hb. Kew.

19. LAPORTEA.

Laportea, Gaudich. in Freyc. Voy. Bot. p. 498; Benth. et Hook. Gen. Plant. iii. p. 383.

Herbs, shrubs, or trees, inhabiting the tropics of the Old World, and North America from Canada to Nicaragua.

1. **Laportea canadensis,** Gaudich. in Freyc. Voy. Bot. p. 498; DC. Prodr. xvi. 1, p. 78.
Nearly all over North America.

δ. **pustulata,** Wedd. in DC. Prodr. xvi. 1, p. 78.
Urtica (*Laportea*) *pustulata,* Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 294 (reprint, p. 10).
South Mexico, Chinantla, Puebla at 7000 feet (*Liebmann*). Hb. Kew.

2. **Laportea mexicana,** Wedd. in DC. Prodr. xvi. 1, p. 84.

Urera platycarpa, Wedd. in Ann. Sc. Nat. série 3, xviii. p. 202.
Laportea platycarpa, Wedd. loc. cit. série 4, i. p. 182, et Monogr. Urtic. p. 132, t. 2, c.
Discocarpus mexicanus, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 309 (reprint, p. 25).

SOUTH MEXICO, Cerro San Felipe, near Oaxaca, 6000 to 7000 feet (*Liebmann*), valley of Mexico (*Bourgeau*, 2280). Hb. Kew.

3. **Laportea nicaraguensis,** Wedd. in DC. Prodr. xvi. 1, p. 84.

Laportea liebmannii, Wedd. Monogr. Urtic. p. 133.
Discocarpus nicaraguensis, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 309 (reprint, p. 25).

NICARAGUA, Matagalpa, Segovia (*Œrsted*).

20. URERA.

Urera, Gaudich. in Freyc. Voy. Bot. p. 496; Benth. et Hook. Gen. Plant. iii. p. 383.

About eighteen shrubby and arboreous species, inhabiting Tropical America and Africa and the Mascarene and Pacific Islands.

1. **Urera baccifera,** Gaudich. in Freyc. Voy. Bot. p. 497; DC. Prodr. xvi. 1, p. 94.

Urtica baccifera, Linn. Sp. Pl. p. 1398; Jacq. Hort. Schœnbr. t. 387.

PANAMA (*Seemann*, 495).—COLOMBIA to BRAZIL, and in the WEST INDIES. Hb. Kew.

β. **horrida,** Wedd. in DC. Prodr. xvi. 1, p. 94; Miq. in Mart. Fl. Bras. iv. 1, p. 192 (species).

COLOMBIA.

γ. **angustifolia,** Wedd. loc. cit.

Urera denticulata et *U. armigera,* Miq. in Mart. Fl. Bras. iv. 1, p. 192.
Urtica grandidentata, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 296 (reprint, p. 12).

COSTA RICA, Volcan de Irazu at 9000 feet (*Œrsted*).

2. **Urera caracasana,** Griseb. Fl. Brit. W. Ind. p. 154; DC. Prodr. xvi. 1, p. 89.

Urtica caracasana, Jacq. Hort. Schœnb. iii. p. 71, t. 386.

SOUTH MEXICO (*Botteri; Bourgeau*).—Widely dispersed in Tropical and Subtropical SOUTH AMERICA, as well as in the WEST INDIES. Hb. Kew.

ε. **tomentosa,** Wedd. in DC. Prodr. xvi. 1, p. 90.

Urera densiflora, Miq. in Mart. Fl. Bras. Mart. iv. 1, p. 190.
Urtica verrucosa, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 295 (reprint, p. 11).

COSTA RICA, Volcan de Irazu at 8000 feet (*Œrsted*).—COLOMBIA.

3. **Urera corallina,** Wedd. in DC. Prodr. xvi. 1, p. 90.

Urtica (*Urera*) *corallina,* Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 295 (reprint, p. 11).
Urera jacquinii ζ. *corallina,* Wedd. Monogr. Urtic. p. 145.

COSTA RICA, Aguacate (*Œrsted*).

4. **Urera elata,** Griseb. Fl. Brit. W. Ind. p. 154; DC. Prodr. xvi. 1, p. 91.
PANAMA (*S. Hayes*, 750).—WEST INDIES.

5. **Urera laciniata,** Wedd. in Ann. Sc. Nat. série 3, xviii. (1852), p. 203; Monogr. Urtic. p. 160, t. 2 A. fig. 10; DC. Prodr. xvi. 1, p. 93.
Urera girardinioides, Seem. Bot. Voy. 'Herald,' pp. 194 et 254.
PANAMA, around Cruces (*Seemann*, 494).—COLOMBIA; PERU. Hb. Kew.

6. **Urera microcarpa,** Wedd. Monogr. Urtic. p. 156, et in DC. Prodr. xvi. 1, p. 95.
SOUTH MEXICO, Yucatan and Tabasco (*Johnson*, 97); PANAMA, Lion-Hill railway-station (*S. Hayes*, 683).—JAMAICA. Hb. Kew.

21. PILEA.

Pilea, Lindl. Collect. t. 4; Benth. et Hook. Gen. Plant. iii. p. 384.

Annual or perennial herbs, sometimes woody at the base. About 100 species are known; and they are generally dispersed in tropical countries, except Australia.

1. **Pilea acuminata,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 302 (reprint, p. 18); DC. Prodr. xvi. 1, p. 154.
SOUTH MEXICO, Mirador (*Liebmann*). Hb. Kew.

2. **Pilea auriculata,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 299 (reprint, p. 15); DC. Prodr. xvi. 1, p. 156.
COSTA RICA, near Cartago (*Ærsted*).

3. **Pilea deltoidea,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 298 (reprint, p. 14); DC. Prodr. xvi. 1, p. 108.
COSTA RICA, Aguacate (*Ærsted*).—CUBA.

4. **Pilea falcata,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 304 (reprint, p. 20); DC. Prodr. xvi. 1, p. 147.
SOUTH MEXICO, near Tanetze and Cacalotepec, Oaxaca (*Liebmann*).

5. **Pilea hyalina,** Fenzl in Denkschr. Wien. k. Akad. i. p. 4; DC. Prodr. xvi. 1, p. 160; Wedd. Monogr. Urtic. p. 271, t. 6. fig. 8; Mart. Fl. Bras. iv. 1, t. 69.
SOUTH MEXICO, Orizaba (*Botteri*, 283, 286; *Sallé*); NICARAGUA, Chontales (*Tate*, 189, 396); COSTA RICA (*Endres*, 253); PANAMA, Chagres (*Fendler*, 284), Santiago (*Seemann*, 276).—Southward to PERU and LA PLATA. Hb. Kew.

6. **Pilea integrifolia,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 298 (reprint, p. 14); DC. Prodr. xvi. 1, p. 115.
SOUTH MEXICO, Amatlan, Totontepec and Comaltepec, Oaxaca (*Liebmann*).

7. **Pilea longipes,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 301 (reprint, p. 17); DC. Prodr. xvi. 1, p. 154.
SOUTH MEXICO, Tonaguia, Oaxaca at 4800 feet (*Liebmann*).

8. **Pilea lundii,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 299 (reprint, p. 15); DC. Prodr. xvi. 1, p. 160.

South Mexico, Misantla, Mirador, Potrero de Consoquitla and Trapiche de la Concepcion, Oaxaca (*Liebmann*); Costa Rica, Cartago (*Ærsted*). Hb. Kew.

9. **Pilea microphylla,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 296 (reprint, p. 12); DC. Prodr. xvi. 1, p. 105.

Pilea muscosa, Lindl. Collect. t. 4.

Parietaria microphylla, Linn. Sp. Pl. p. 1492.

Nearly all over Tropical America.

β. **herniarioides,** Wedd. in DC. Prodr. xvi. 1, p. 106; Lindl. Collect. sub t. 4 (species).

Pilea peperomiæfolia, Liebm. in K. Dansk. Selsk. Skrift. ser. 5, ii. p. 297 (reprint, p. 13).

South Mexico, Santiago, Amatlan at 5000 feet (*Liebmann*). Hb. Kew.

γ. **longifolia,** Wedd. loc. cit.

South Mexico (*Sumichrast*).

δ. **portulacoides,** Wedd. loc. cit.

Pilea portula, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 297 (reprint, p. 13)?

Pilea portulacina, Bl. Mus. Bot. Lugd. Bat. ii. p. 44?

Urtica portulacina, Spreng. Syst. Veg. iii. p. 838?

Costa Rica, Aguacate (*Ærsted*).—Brazil; West Indies.

10. **Pilea mexicana,** Wedd. in Ann. Sc. Nat. série 3, xviii. p. 214; Monogr. Urtic. p. 239; DC. Prodr. xvi. 1, p. 146.

South Mexico, region of Orizaba (*Botteri*, 19; *Müller*, 183), Zuluzuchiapa, Chiapas (*Linden*, 72). Hb. Kew.

11. **Pilea nana,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 299 (reprint, p. 15); DC. Prodr. xv. 1, p. 159.

South Mexico, Antigua, Vera Cruz (*Liebmann*).

12. **Pilea pubescens,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 302 (reprint, p. 18); DC. Prodr. xvi. 1, p. 152.

Widely dispersed in Tropical America. Hb. Kew.

δ. **fuscata,** Wedd. in DC. Prodr. xvi. 1, p. 153; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 300 (reprint, p. 16)—species.

Pilea xalapensis, Wedd. Monogr. Urtic. p. 255.

South Mexico, Mirador and Trapiche de la Concepcion (*Liebmann*), Vera Cruz (*Galeotti*, 313), Mirador (*Linden*, 41). Hb. Kew.

ε. **rupicola,** Wedd. loc. cit., et in Ann. Sc. Nat. série 3, xviii. p. 224 (species).

South Mexico, Teapa, Tabasco (*Linden*, 71). Hb. Kew.

13. **Pilea rhexioides,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 304 (reprint, p. 20); DC. Prodr. xvi. 1, p. 141.

South Mexico, Barranca de Huitamalco, Puebla (*Liebmann*).

14. **Pilea rubiæfolia,** Bl. Mus. Bot. Lugd. Bat. ii. p. 49; DC. Prodr. xvi. 1, p. 114.

Guatemala (ex *Blume*).

15. **Pilea scrobiculata,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 300 (reprint, p. 16); DC. Prodr. xiv. 1, p. 160.

South Mexico, Trapiche de la Concepcion, Oaxaca (*Liebmann*).

16. **Pilea serpyllifolia,** Wedd. in DC. Prodr. xvi. 1, p. 107.

Pilea callitrichioides, Kth. Ind. Sem. Hort. Berol. 1846, p. 12.
Pilea peplidifolia, Schl. in Linnæa, xxvii. p. 496.
Parietaria serpyllifolia, Poir. in Lam. Encycl. v. p. 16.
Urtica serpyllacea, H. B. K. Nov. Gen. et Sp. ii. p. 37; Cham. et Schl. in Linnæa, vi. p. 356.
Pilea serpyllacea, Hook. et Arn. Bot. Beech. Voy. p. 96; Wedd. Monogr. Urtic. p. 177, t. 6, c.

South Mexico, Jalapa at 3000 feet (*Galeotti*, 7084), Mirador (*Linden*, 79), Potrero de Consoquitla (*Liebmann*); Costa Rica (*Œrsted*).—Colombia. Hb. Kew.

17. **Pilea trianthemoides,** Lindl. Collect. sub t. 4; DC. Prodr. xvi. 1, p. 106; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 297 (reprint, p. 13).

South Mexico, Mirador, Potrero de Consoquitla, &c. (*Liebmann*).—West Indies.

18. **Pilea trichotoma,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 303 (reprint, p. 19); DC. Prodr. xvi. 1, p. 156.

Mexico, cultivated in the Copenhagen Botanic Garden.

19. **Pilea vulcanica,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 303 (reprint, p. 19); DC. Prodr. xvi. 1, p. 142.

South Mexico, Volcan de Orizaba at 10,000 feet (*Liebmann*).

22. BŒHMERIA.

Bœhmeria, Jacq. Stirp. Amer. p. 246, t. 157; Benth. et Hook. Gen. Plant. iii. p. 387.

Small trees, shrubs, or undershrubs. About forty-five species are known; and they are generally diffused in tropical regions, a few extending into extratropical North and South America, and in Eastern Asia to Japan.

1. **Bœhmeria caudata,** Sw. Prodr. p. 34, et Fl. Ind. Occ. p. 279; DC. Prodr. xvi. 1, p. 201; Mart. Fl. Bras. iv. 1, t. 64 et 65; Bl. Mus. Bot. Lugd. Bat. ii. p. 215, t. 56.

Bœhmeria flagelliformis, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 310 (reprint, p. 26).
Bœhmeria ampullacea et *B. petiolaris,* H. B. K. Nov. Gen. et Sp. ii. pp. 35 et 36.

South Mexico, region of Orizaba (*Bourgeau*, 2577), Matlaluca and Colipa (*Liebmann*),

Chilotepec, Vera Cruz (*Linden*, 45), valley of Cordova (*Bourgeau*, 1690); Costa Rica, Aguacate (*Œrsted*).—Colombia to Peru and Brazil and in the West Indies. Hb. Kew.

2. **Bœhmeria cylindrica,** Willd. Sp. iv. p. 340; DC. Prodr. xvi. 1, p. 202; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 310 (reprint, p. 26).

Canada southward to Texas.—Mexico, Tecolula, Vera Cruz (*Liebmann*).—West Indies to Brazil. Hb. Kew.

3. **Bœhmeria fallax,** Wedd. Monogr. Urtic. p. 346; DC. Prodr. xvi. 1, p. 197.

Peru.

γ. **ulmifolia,** Wedd. in DC. Prodr. xvi. 1, p. 198, et Monogr. p. 347 (species); Bl. Mus. Bot. Lugd. Bat. ii. p. 226 (species).

South Mexico, Jalapa (*Galeotti*, 311), Esquintla, Vera Cruz (*Linden*, 44). Hb. Kew.

23. POUZOLZIA.

Pouzolzia, Gaudich. in Freyc. Voy. Bot. p. 503; Benth. et Hook. Gen. Plant. iii. p. 387.

Herbs, undershrubs, or shrubs. Nearly fifty species, spread over the tropics, but least numerous in America.

1. **Pouzolzia guatemalana,** Wedd. in DC. Prodr. xvi. 1, p. 233.

Bœhmeria guatemalana, Bl. Mus. Bot. Lugd. Bat. ii. p. 206.

Guatemala (*Friedrichsthal*).

2. **Pouzolzia latifolia,** Wedd. in DC. Prodr. xvi. 1, p. 234.

Mexico (hb. *Pavon*).

3. **Pouzolzia obliqua,** Wedd. Monogr. Urtic. p. 405, et in DC. Prodr. xvi. 1, p. 231.

Margarocarpus obliquus, Wedd. Monogr. Urtic. p. 204.

Panama, Paraiso railway-station (*S. Hayes*, 350).—Colombia to Peru. Hb. Kew.

4. **Pouzolzia occidentalis,** Wedd. Monogr. Urtic. p. 410, et in DC. Prodr. xvi. 1. p. 234.

Leucococcus occidentalis, Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 311 (reprint, p. 27).

Nicaragua, near Granada (*Œrsted*).

24. MYRIOCARPA.

Myriocarpa, Benth. Bot. Voy. 'Sulphur,' p. 168, t. 55; Benth. et Hook. Gen. Plant. iii. p. 391.

An exclusively Tropical-American genus, of about six shrubby or small arboreous species, ranging from Mexico to Peru and Brazil.

1. **Myriocarpa bifurca,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 307 (reprint, p. 23); DC. Prodr. xvi. 1, p. 235[36].

Nicaragua, Volcan de Masaya (*Œrsted*).

2. **Myriocarpa cordifolia,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 306 (reprint, p. 22); DC. Prodr. xvi. 1, p. 235[35].

South Mexico, Colipa (*Liebmann*). Hb. Kew.

3. **Myriocarpa inæquilatera,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 307 (reprint, p. 23); DC. Prodr. xvi. i. p. 235[35].

Costa Rica, Aguacate (*Œrsted*).

4. **Myriocarpa longipes,** Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 306 (reprint, p. 22); DC. Prodr. xvi. 1, p. 235[35].

Nicaragua (*Tate*); Costa Rica, Aguacate (*Œrsted*). Hb. Kew.

β. **colipensis,** Wedd. in DC. Prodr. xvi. 1, p. 235[35]; Liebm. loc. cit. (species).

Myriocarpa cordifolia β. *colipensis,* Wedd. Monogr. Urtic. p. 488.

South Mexico, Colipa, Vera Cruz (*Liebmann*). Hb. Kew.

5. **Myriocarpa stipitata,** Benth. Bot. Voy. 'Sulphur,' p. 168, t. 55; DC. Prodr. xvi. 1, p. 235[34]; Wedd. Monogr. Urtic. t. 16, D.

Myriocarpa humilis, Wedd. in Ann. Sc. Nat. série 3, xviii. p. 282.

South Mexico (*Botteri; Bourgeau*); Panama, Chagres (*Fendler,* 280), Boquete (*Seemann,* 1575).—Venezuela and Colombia to Bolivia and Brazil. Hb. Kew.

γ. **ambigua,** Wedd. in DC. Prodr. xvi. 1, p. 235[34].

South Mexico, Vera Cruz at 3900 feet (*Galeotti,* 317).

25. PHENAX.

Phenax, Wedd. in Ann. Sc. Nat. série 4, i. p. 191; Benth. et Hook. Gen. Plant. iii. p. 392.

Shrubs and undershrubs. About ten species, all inhabiting Tropical America, and one of them also occurring in Mauritius and Malacca, where, however, it may have been introduced.

1. **Phenax angustifolius,** Wedd. in Ann. Sc. Nat. série 4, i. p. 193; DC. Prodr. xvi. 1, p. 235[41]; Monogr. Urtic. p. 501, t. 16, A.

Bœhmeria angustifolia, H. B. K. Nov. Gen. et Sp. ii. p. 34.

Costa Rica, Aguacate (*Œrsted*).—Colombia to Peru.

2. **Phenax hirtus,** Wedd. in DC. Prodr. xvi. 1, p. 235[38].

Phenax urticæfolius, Wedd. in Ann. Sc. Nat. série 4, i. p. 192; Bl. Mus. Bot. Lugd. Bat. ii. p. 169, t. 54.

Urtica hirta, Sw. Fl. Ind. Occ. i. p. 285.

Bœhmeria urticæfolia et *B. hirta,* Pers. Synop. ii. p. 556.

South Mexico, Tlapacoya and San Antonio (*Liebmann*), region of Orizaba (*Bourgeau,* 2576; *Sallé*), Cordillera of Vera Cruz (*Galeotti,* 310); Guatemala, Zapote (*Friedrichsthal*); Costa Rica at 3500 feet (*Endres*).—Colombia to Peru and the West Indies. Hb. Kew.

3. **Phenax mexicanus,** Wedd. Monogr. Urtic. p. 500; DC. Prodr. xvi. 1, p. 235[40].

Phenax gaudichaudianus, Wedd. in Ann. Sc. Nat. série 4, i. p. 193.
Phenax galeottianus, Bl. Mus. Bot. Lugd. Bat. ii. p. 227.

South Mexico, region of Orizaba (*Bourgeau*, 2811; *Müller*, 277), Cordillera of Oaxaca, at 3000 to 4000 feet (*Galeotti*, 325). Hb. Kew.

4. **Phenax sonneratii,** Wedd. in DC. Prodr. xvi. 1, p. 235[37].

Phenax vulgaris, Wedd. in Ann. Sc. Nat. série 4, i. p. 192.
Bœhmeria elongata, Fisch.; Jacq. Ecl. Pl. t. 135; Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 309 (reprint, p. 25).

South Mexico, Jalapa (*Schiede & Deppe*), Colipa (*Liebmann*); Guatemala, Mazatenango (*Bernoulli*).—Colombia to Peru and Brazil and in the West Indies; also in Mauritius and Malacca, though probably introduced. Hb. Kew.

26. PARIETARIA.

Parietaria, Linn. Gen. Plant. n. 1152; Benth. et Hook. Gen. Plant. iii. p. 392.

About eight herbaceous species, widely spread in temperate regions, rarer within the tropics.

1. **Parietaria debilis,** Forst. Fl. Ins. Austr. Prodr. n. 387; DC. Prodr. xvi. 1, p. 235[45]; Wedd. Monogr. Urtic. p. 517, t. 17. figg. 21–25.

Mexico (ex *Weddell*).—This species is spread nearly all over the World, except Europe and the frigid regions.

2. **Parietaria pennsylvanica,** Mühlenb. Cat. Pl. Am.; DC. Prodr. xvi. 1, p. 235[47] (varietates).

Parietaria orizabæ et *P. linguæfolia,* Liebm. in K. Dansk. Vidensk. Selsk. Skrift. ser. 5, ii. p. 313 (reprint, p. 29).

Vermont and Wisconsin southward to Texas.—Mexico, common, and found at an altitude of 10,000 feet on the peak of Orizaba (*Liebmann*). Hb. Kew.

Order CXXVIII. PLATANACEÆ.

Platanaceæ, Benth. et Hook. Gen. Plant. iii. p. 396.

A monotypic order.

1. PLATANUS.

Platanus, Linn. Gen. Plant. n. 1075; Benth. et Hook. Gen. Plant. iii. p. 396.

Five or six arboreous species, inhabiting Eastern Europe, Temperate and Subtropical Asia, and North America. The Mexican species need revision.

1. **Platanus lindeniana,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2); DC. Prodr. xvi. 2, p. 159.

South Mexico, near Jalapa at 4000 feet (*Linden*, 9).

2. **Platanus mexicana,** Moric. in Bull. Ferr. Bot. 1830, p. 79, et Pl. Nouv. d'Amér. p. 39, t. 26; DC. Prodr. xvi. 2, p. 160.

North Mexico, Monterey (*Berlandier*, 1388; *Palmer*, 1628); South Mexico, Huatusco (*Liebmann*). Hb. Kew.

3. **Platanus racemosa,** Nutt. Suppl. N. Am. Sylva, i. p. 47, t. 15; DC. Prodr. xvi. 2, p. 160?

North Mexico, Monclova (*Palmer*, 1269).

4. **Platanus wrightii,** S. Wats. in Proc. Am. Acad. Sc. x. p. 349.

Arizona.—North Mexico, Chiricahui Mountains (*Lemmon*). Hb. Kew.

5. **Platanus,** sp.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1463; *Bourgeau*, 2313), without locality (*Schiede & Deppe*). Hb. Kew.

[Leitnerieæ, an Order of one genus and two species—one inhabiting Florida, and the other Texas.]

Order CXXIX. JUGLANDEÆ.

Juglandeæ, Benth. et Hook. Gen. Plant. iii. p. 397.

Trees. There are five genera, comprising upwards of thirty species, widely dispersed in the temperate regions of the northern hemisphere, and extending to the mountains of Tropical Asia and Central America.

1. CARYA.

Carya, Nutt. Gen. N. Am. Pl. ii. p. 220; Benth. et Hook. Gen. Plant. iii. p. 398.

About twelve species, inhabiting North America.

1. **Carya mexicana,** Engelm., n. sp.

Arbor 50–60-pedalis; *gemmæ* ovato-acutæ, circiter 2 lineas longæ, squamis pubescentibus, exterioribus acuminatis, sæpius subulatis; *foliola* 5, ovato-lanceolata, acuminata, subtus pubescentia, argute serrata (dentibus pubescenti-fimbrillatis), terminale basi acutum, breviter petiolulatum, lateralia sessilia, basi obliqua semicordata; petiolus glaber vel glabrescens. *Nux* compressa, circiter 1 poll. lata, magis lata quam longa, 4-angularis, exocarpio ultra medium 4-valvo.

North Mexico, high mountains of Alvarez, twenty miles south-east of San Luis Potosi, at an altitude of 8000 feet (*Palmer*, 835½). Hb. Kew.

"A large tree, 50–60 feet high; winter buds ovate-acute, about ¼ inch long, with

pubescent scales, the outer acuminate, often with subulate points; leaflets in fives, ovate-lanceolate, acuminate, terminal ones acute at base, short-petioled, lateral ones sessile with an oblique semicordate base, sharply serrate with ascending or somewhat appressed fringed-pubescent serratures, pubescent (even in November) on the lower side, while (at that season at least) the petiole is glabrous; nut compressed, about 1 inch broad, broader than high, 4-angled; husk thick, 4-valved beyond the middle. Near *Carya alba*, but with smaller buds, more pubescent leaves, closer, more appressed serratures; leaflets about 4 inches long and $\frac{1}{2}$ inch wide, or occasionally almost twice as large; wood dense, showing rapid growth, bark apparently scaly."—*Engelmann*, MSS.

2. **Carya olivæformis,** Nutt. Gen. N. Am. Pl. ii. p. 221; DC. Prodr. xvi. 2, p. 144.

Juglans olivæformis, Marsh, Arbust. Amer. p. 105; Michx. Hist. Arbr. Forest. de l'Amér. Sept. i. p. 173, t. 3; Michx. N. Amer. Sylv. i. p. 167, t. 32.

Carya tetraptera, Liebm. in Vidensk. Meddel. 1850, p. 80.

Illinois, southward to Louisiana and Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 835½); South Mexico, Oaxaca (*Liebmann*). Hb. Kew.

2. JUGLANS.

Juglans, Linn. Gen. Plant. n. 1071, pro parte; Benth. et Hook. Gen. Plant. iii. p. 398.

Eight or nine species, widely dispersed in the northern hemisphere.

1. **Juglans mollis,** Engelm. in Hemsl. Diag. Pl. p. 54.

Arbor mediocris, cortice nigro; *foliola* 11–13, late ovata, acuta, basi obtusa vel subcordata, lateralia subsessilia, obliqua, terminale petiolulatum, omnia dense irregulariterque biserrata, subtus tomentosa, supra demum fere glabra. *Nux* globosa, leviter compressa, longitudinaliter sulcata, circiter $1\frac{3}{4}$ poll. diametro maxima et $1\frac{1}{4}$ diametro minima, endocarpio crassissimo.

North Mexico, mountains east of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 385). Hb. Kew.

"Medium-sized tree, with black bark and very dark heart-wood; leaflets 11–13, ovate, acute, obtuse or subcordate at base, terminal one petioled, lateral ones subsessile and somewhat oblique (the upper half being the widest), all closely doubly or irregularly serrate; tomentose underneath, at last almost glabrate above; nut depressed-globose, slightly compressed, with shallow grooves between flat ridges extending from base to top; shell and partitions very thick, scarcely smaller than the cavities between them. A tree apparently of slow growth; bark of specimen collected $\frac{1}{2}$ inch thick, sap-wood about 1 inch thick, showing thirty annual rings; heart-wood as dark as that of *J. nigra*; leaves 8–10 inches, leaflets $2\frac{1}{2}$–$4\frac{1}{2}$ inches long by $\frac{1}{4}$–2 inches wide, strongly ribbed underneath, and soft pubescent to rusty tomentose when young; nuts about $1\frac{1}{3}$ inch broad and $1\frac{1}{4}$ inch high. Allied to *J. frutescens* and *J. californica*, but with much larger nuts and broader leaves than any known North-American species. The

only other described Mexican species, *J. pyriformis*, Leibm., is said to have a very different form of nut and many more leaflets (19–31)."—*Engelmann*, MSS.

2. **Juglans pyriformis,** Liebm. in Vidensk. Meddel. 1850, p. 79; DC. Prodr. xvi. 2, p. 138.

South Mexico, Orizaba (*Botteri*, 879; *Liebmann*). Hb. Kew.

3. **Juglans rupestris,** Engelm. in Torr. Bot. Sitgr. Rep. p. 171, t. 15, et Bot. U.S. & Mex. Bound. Surv. p. 205; DC. Prodr. xvi. 2, p. 138.

Texas; New Mexico.—North Mexico, Sonora (ex *Torrey*).

3. ENGELHARDTIA.

Engelhardtia, Leschen. in Bl. Bijdr. tot Fl. Nederl. Ind. p. 528; Benth. et Hook. Gen. Plant. iii. p. 399.

About ten species, inhabiting India, the Malayan Archipelago, and China, and the following doubtful one.

1. **Engelhardtia oreomunnea,** C. DC. in Ann. Sc. Nat. série 4, xviii. p. 36, t. 5. fig. 50, et in DC. Prodr. xvi. 2, p. 142.

Oreomunnea pterocarpa, Œrst. in Vidensk. Meddel. 1856, p. 34, et 1870, p. 166, t. 2 (*Oreamunoa*).

Costa Rica, between Naranjo and Tucuriqui, 4000 to 5000 feet (*Œrsted*).

Order CXXX. MYRICACEÆ.

Myricaceæ, Benth. et Hook. Gen. Plant. iii. p. 400.

This Order consists of a single genus of about thirty-five arboreous and shrubby species, very widely dispersed in temperate and warm regions, though hitherto no species has been found in Australia.

1. MYRICA.

Myrica, Linn. Gen. Plant. n. 1107; Benth. et Hook. Gen. Plant. iii. p. 400.

1. **Myrica lindeniana,** C. DC. in DC. Prodr. xvi. 2, p. 150.

South Mexico, Chiapas (*Linden*, 9). Hb. Kew.

2. **Myrica xalapensis,** H. B. K. Nov. Gen. et Sp. ii. p. 10; DC. Prodr. xvi. 2, p. 150.

Myrica polycarpa, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 24), non H. B. K.

South Mexico, Jalapa, 3000 to 4000 feet (*Humboldt & Bonpland; Linden*, 10), Cordillera of Vera Cruz at 3500 feet (*Galeotti*, 77), Cordillera of Oaxaca, 3000 to 3500 feet (*Galeotti*, 76; *Hartweg*), Orizaba (*Botteri*, 880; *Sallé*); Guatemala, Dueñas (*Godman & Salvin*). Hb. Kew.

[The CASUARINÆ are a small Order of one genus and twenty-three arboreous and shrubby species, most of which inhabit Australia and New Caledonia; four occur in the Malayan Archipelago, one of which has also a wide range in Tropical Asia, the Mascarene and Pacific Islands.]

Order CXXXI. CUPULIFERÆ.

Cupuliferæ, Benth. et Hook. Gen. Plant. iii. p. 402.

Ten genera and about 400 arboreous and shrubby species, generally dispersed in the temperate regions of the northern hemisphere, and extending into the tropics as well as into the arctic regions; one genus only, *Fagus*, in the temperate and frigid regions of the southern hemisphere.

Tribe I. BETULÆ.

Betulæ, Benth. et Hook. Gen. Pant. iii. p. 403.

This tribe comprises two genera and about forty species.

1. ALNUS.

Alnus, Gærtn. Fruct. ii. p. 54, t. 90; Benth. et Hook. Gen. Plant. iii. p. 404.

About fourteen species, widely spread in Europe, Central and Northern Asia, North America, and the Andes of South America; one of the European species also occurs in South Africa, where, however, it was accidentally introduced.

1. **Alnus acuminata,** H. B. K. Nov. Gen. et Sp. ii. p. 20; DC. Prodr. xvi. 2, p. 183.

α. **genuina,** Regel in DC. Prodr. xvi. 2, p. 184; Mirbel in Mém. Mus. d'Hist. Nat. Par. xiv. t. 22.

Betula arguta, Schl. in Linnæa, vii. p. 139.

Alnus arguta, Spach in Ann. Sc. Nat. série 2, xv. p. 205.

SOUTH MEXICO, Orizaba, 7000 to 10,000 feet (*Linden*, 1040; *Liebmann*), near San Miguel del Soldado, Naulingo, Acatlan, and Chiconquiaco (*Schiede*).—PERU. Hb. Kew.

β. **mirbelii,** Regel, loc. cit.

Alnus jorullensis, Benth. Pl. Hartw. p. 52, non H. B. K.

SOUTH MEXICO, near Zacualtipan (*Hartweg*).—PERU; BOLIVIA. Hb. Kew.

δ. **ferruginea,** Regel, Monogr. p. 90, et in DC. Prodr. xvi. 2, p. 184; H. B. K. Nov. Gen. et Sp. ii. p. 21 (species).

Alnus rufescens, Liebm. MSS.

SOUTH MEXICO, Cerro de San Felipe (*Liebmann*); GUATEMALA (*Türckheim*); PANAMA, Boquete (*Seemann*).—COLOMBIA to BOLIVIA. Hb. Kew.

A very variable species, common in the mountains from North Mexico to Peru and Bolivia. In Kew herbarium there are numerous specimens from Mexico and Central America that are not referred to any particular variety.

2. **Alnus jorullensis,** H. B. K. Nov. Gen. et Sp. ii. p. 20.

α. **typica,** Regel in DC. Prodr. xvi. 2, p. 184.

South Mexico, Volcan de Jorullo at about 3700 feet (*Humboldt & Bonpland*), peak of Orizaba at 8000 to 10,000 feet (*Liebmann; Schiede*).

β. **castaneæfolia,** Regel in DC. Prodr. xvi. 2, p. 184; Mirbel in Mém. Mus. d'Hist. Nat. Par. xiv. p. 463, t. 21 (species).

South Mexico, Orizaba (*Bilimek*, 404).—Peru. Hb. Kew.

Tribe II. CORYLEÆ.

Coryleæ, Benth. et Hook. Gen. Plant. iii. p. 403.

Four genera and about twenty species in temperate regions all round the northern hemisphere.

2. OSTRYA.

Ostrya, Scop. Fl. Carn. p. 414; Benth. et Hook. Gen. Plant. iii. p. 406.

Two species, the second inhabiting the south of Europe and Western Asia.

1. **Ostrya virginica,** Willd. Sp. Pl. iv. p. 469; DC. Prodr. xvi. 2, p. 125.

Carpinus ostrya, Linn. Sp. Pl. p. 1417 (quoad syn. Amer.); Michx. Hist. Arbr. For. de l'Amér. Sept. iii. p. 54, non ic.

Ostrya vulgaris, Wats. Dendr. t. 143.

New Brunswick and Lake Winipeg southward to Florida.—Mexico, Jalapa (*Linden*, 26), Orizaba (*Botteri*, 284, 977); Guatemala, Volcan de Fuego at 6400 feet (*Salvin*). Hb. Kew.

Tribe III. QUERCINEÆ.

Quercineæ, Benth. et Hook. Gen. Plant. iii. p. 403.

Four genera and about 340 species, covering the whole area of the Order, except the colder northern regions where Birches and Alders are found.

3. QUERCUS.

Quercus, Linn. Gen. Plant. n. 1070; Benth. et Hook. Gen. Plant. iii. p. 407.

About 300 species, widely dispersed in temperate regions of the northern hemisphere, and extending southward in the mountains of Tropical America as far as Colombia, and

in Asia as far as the Malayan Archipelago. Altogether wanting in the rest of South America, in Africa, except the Mediterranean region, in the Mascarene Islands, in Australasia, the Pacific Islands, and New Guinea.

1. **Quercus acutifolia,** Nee in Anal. Cienc. Nat. iii. p. 267; DC. Prodr. xvi. 2, p. 66; Liebm. Chênes de l'Amér. Trop. t. 13.

Quercus furfuracea, Liebm. in Overs. K. Dansk. Videnskl. Selsk. Forhandl. 1854, p. 189, et Chênes de l'Amér. Trop. t. 12. figg. 2 et 3.

North Mexico, Sierra Madre (*Seemann*, 1966); South Mexico, Acapulco (*Nee*), Orizaba (*Botteri*), Yavesia, Oaxaca at 7500 feet (*Liebmann*); Guatemala (*Warscewicz; Skinner*). Hb. Kew.

β. **bonplandi,** A. DC. Prodr. xvi. 2, p. 66.

Quercus acutifolia, Humb. et Bonpl. Pl. Æquin. ii. p. 55, t. 95.

South Mexico, between Mexico and Acapulco (*Humboldt & Bonpland*).

γ. **angustifolia,** A. DC. loc. cit.

Mexico (*Thibaut*); Guatemala (*Warscewicz*).

δ. **conspersa,** A. DC. Prodr. xvi. 2, p. 66; Benth. Pl. Hartw. p. 91 (species); Liebm. Chênes de l'Amér. Trop. t. D et t. 12. fig. 1.

Quercus nitida, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 3); Liebm. Chênes de l'Amér. Trop. t. 11. fig. 1.

South Mexico, neighbourhood of Taretan and Uruapan, Michoacan 4000 to 5000 feet (*Galeotti*, 121); Guatemala, mountains of Las Casillas (*Hartweg*, 617), without locality (*Warscewicz; Skinner*). Hb. Kew.

ε. **longifolia,** A. DC. loc. cit. p. 67; Liebm. in Overs. K. Dansk. Videnskl. Selsk. Forhandl. 1854, p. 185 (species), et Chênes de l'Amér. Trop. p. 26 (species).

Guatemala and Costa Rica (*Warscewicz*). Hb. Kew.

ζ. **microcarpa,** A. DC. loc. cit.

Guatemala (*Warscewicz*).

2. **Quercus agrifolia,** Nee in Anal. Cienc. Nat. iii. p. 271; DC. Prodr. xvi. 2, p. 37; Hook. Ic. Pl. t. 377; Journ. Hort. Soc. Lond. vi. p. 157, cum ic. opt.; Nutt. Sylva, i. p. 5, t. 2.

Quercus oxyadenia, Torr. in Sitgr. Rep. p. 173, t. 17.

Oregon; California.—Mexico (hb. *Pavon*).

3. **Quercus aristata,** Hook. et Arn. Bot. Beech. Voy. p. 444; DC. Prodr. xvi. 2, p. 75; Seem. Bot. Voy. 'Herald,' p. 332.

North Mexico, Cerro de Pinal (*Seemann*, 1458); South Mexico, between San Blas and Tepic (*Sinclair*). Hb. Kew.

4. **Quercus barbinervis,** Benth. Pl. Hartw. p. 56; DC. Prodr. xvi. 2. p. 31; Liebm. Chênes de l'Amér. Trop. t. E et t. 18. fig. 9.

South Mexico, Real del Monte (*Hartweg*, 427; *Graham*, 335). Hb. Kew.

5. **Quercus benthami,** A. DC. Prodr. xvi. 2, p. 29; Liebm. Chênes de l'Amér. Trop. t. 22. figg. 1, 2.

Quercus undulata, Benth. Pl. Hartw. p. 81, non Torr.

Guatemala, Santa Maria (*Hartweg*). Hb. Kew.

6. **Quercus bourgæi,** Œrst. in hb. Kew. (ubi pub.?).

South Mexico, valley of Mexico (*Bourgeau*, 1013). Hb. Kew.

7. **Quercus brachystachys,** Benth. Pl. Hartw. p. 91; DC. Prodr. xvi. 2, p. 75; Liebm. Chênes de l'Amér. Trop. t. 2. fig. 1.

Guatemala, Cuesta de Mixco, near San Luis in the mountains of Quezaltenango (*Hartweg*, 618). Hb. Kew.

8. **Quercus bumelioides,** Liebm. in Seem. Bot. Voy. 'Herald,' p. 251; DC. Prodr. xvi. 2, p. 75; Chênes de l'Amér. Trop. p. 26.

Guatemala (*Friedrichsthal*); Panama, Boquete, Veraguas (*Seemann*). Hb. Kew.

9. **Quercus calophylla,** Cham. et Schl. in Linnæa, v. p. 79; DC. Prodr. xvi. 2, p. 65; Liebm. Chênes de l'Amér. Trop. t. B et t. 1.

Quercus alamo, Benth. Pl. Hartw. pp. 55 et 348.

Quercus intermedia, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 15).

Quercus acuminata, Mart. et Gal. loc. cit. p. 10.

South Mexico, Huasca (*Hartweg*), Jalapa (*Schiede & Deppe*), Mirador, Totutla, and Alpatlahua at 7500 feet (*Liebmann*), Cordillera of Vera Cruz and Chinantla 3000 to 4000 feet (*Galeotti*, 96 and 105), San Miguel del Soldado (*Linden*, 17). Hb. Kew.

10. **Quercus candicans,** Nee in Anal. Cienc. Nat. iii. p. 277; DC. Prodr. xvi. 2, p. 75; Liebm. Chênes de l'Amér. Trop. t. 7. fig. 4.

South Mexico, Tixtala (*Nee*).

11. **Quercus castanea,** Nee in Anal. Cienc. Nat. iii. p. 276; DC. Prodr. xvi. 2, p. 72; Liebm. Chênes de l'Amér. Trop. t. 7. fig. 3, et t. 8.

Quercus mucronata, Willd. Sp. Pl. iv. p. 436.

Quercus tristis, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 174, et Chênes de l'Amér. Trop. p. 23.

South Mexico, Mirador and Yavesia (*Liebmann*), between Ixmiquilpan and Zimapan (*Nee*); Guatemala (*Warscewicz*). Hb. Kew.

β. **sublobata,** A. DC. Prodr. xvi. 2, p. 72.

Guatemala (*Warscewicz*).

γ. **tridens,** A. DC. loc. cit.; Humb. et Bonpl. Pl. Æquin. ii. p. 56, t. 96 (species).

South Mexico, near Moran (*Humboldt & Bonpland*).

δ. **glabrata,** A. DC. Prodr. xvi. 2, p. 72.

Quercus mexicana, var. *glabrata,* Liebm. in Seem. Bot. Voy. 'Herald,' p. 332.

North Mexico, Sierra Madre (*Seemann*, 1974). Hb. Kew.

ε. **mexicana,** A. DC. loc. cit.; Humb. et Bonpl. Pl. Æquin. ii. p. 35, t. 82 (species).

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 839), Sierra Madre (*Seemann*, 1976, 1977, 1978); South Mexico, Santa Fé, valley of Mexico (*Bourgeau*, 424, 1014, 1136), Chilpancingo, Moran, Regla (*Humboldt & Bonpland*). Hb. Kew.

12. **Quercus chrysophylla,** Humb. et Bonpl. Pl. Æquin. ii. p. 42, t. 87; DC. Prodr. xvi. 2, p. 75.

South Mexico, between Moran and Pachuca, at 7200 to 7800 feet (*Humboldt & Bonpland*).

13. **Quercus circinata,** Nee in Anal. Cienc. Nat. iii. p. 272, excl. var.; DC. Prodr. xvi. 2, p. 26.

South Mexico, between Tixtala and Chilpancingo (*Nee*); Cuesta de San Juan del Estado (*Liebmann*).

14. **Quercus citrifolia,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Fordhandl. 1854, p. 187, et Chênes de l'Amér. Trop. p. 26, t. E.

Costa Rica, Volcan de Irazu, 9000 feet (*Œrsted*).

15. **Quercus confertifolia,** Humb. et Bonpl. Pl. Æquin. ii. p. 53, t. 94; DC. Prodr. xvi. 2, p. 74.

South Mexico, between Guanajuato and Santa Rosa (*Humboldt & Bonpland*).

16. **Quercus cordata,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 4); DC. Prodr. xvi. 2, p. 76.

South Mexico, Misteca Alta, 6000 to 7500 feet (*Galeotti*, 111).

17. **Quercus corrugata,** Hook. Ic. Pl. t. 403; DC. Prodr. xvi. 2, p. 25; Liebm. Chênes de l'Amér. Trop. t. 31.

Guatemala, Acatenango to Pasicia (*Skinner*), without locality (*Warscewicz*). Hb. Kew.

18. **Quercus cortesii,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 175, et Chênes de l'Amér. Trop. t. C; DC. Prodr. xvi. 2, p. 29.

South Mexico, Hacienda de Jovo, Vera Cruz, and Huitamalco, Puebla (*Liebmann*).

19. **Quercus costaricensis,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 184, Chênes de l'Amér. Trop. t. 24. figg. 1–8; DC. Prodr. xvi. 2, p. 32.

Guatemala (*Warscewicz*); Costa Rica, Volcan de Irazu, 8000 to 10,000 feet (*Œrsted*), Cartago (*Warscewicz*). Hb. Kew.

20. **Quercus crassifolia,** Humb. et Bonpl. Pl. Æquin. ii. p. 49, t. 91; DC. Prodr. xvi. 2, p. 56; Liebm. Chênes de l'Amér. Trop. t. 18. figg. 1–4.

Quercus rugosa, Nee in Anal. Cienc. Nat. iii. p. 275?

Quercus spinulosa, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 11).

South Mexico, Chilpancingo (*Humboldt & Bonpland*), Orizaba (*Galeotti*, 114); Guatemala and Costa Rica (*Warscewicz*). Hb. Kew.

21. **Quercus crassipes,** Humb. et Bonpl. Pl. Æquin. ii. p. 37, t. 83; DC. Prodr. xvi. 2, p. 73.

Quercus mexicana, Benth. Pl. Hartw. p. 56, non Humb. et Bonpl.

South Mexico, near Santa Rosa and Ario (*Humboldt & Bonpland*), Tlalpujahua (*Hartweg*, 431), valley of Mexico (*Bourgeau*, 424). Hb. Kew.

22. **Quercus cuneifolia,** Liebm. in Seem. Bot. Voy. 'Herald,' p. 334; DC. Prodr. xvi. 2, p. 76; Liebm. Chênes de l'Amér. Trop. t. K.

Quercus chinantlensis, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 179.

North Mexico, Cerro de Pinal (*Seemann*, 1456); South Mexico, Chinantla, Oaxaca (*Liebmann*). Hb. Kew.

23. **Quercus depressa,** Humb. et Bonpl. Pl. Æquin. i. p. 50, t. 92; DC. Prodr. xvi. 2, p. 70; Liebm. Chênes de l'Amér. Trop. t. 15.

South Mexico, Pelado de San Andres, 9000 to 10,000 feet (*Liebmann*), mountains of Yavezia, 7500 feet (*Galeotti*, 106), mountains near Moran (*Humboldt & Bonpland*). Hb. Kew.

24. **Quercus dysophylla,** Benth. Pl. Hartw. p. 55; DC. Prodr. xvi. 2, p. 76.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 837), Sierra Madre (*Seemann*, 1969); South Mexico, mountains of Huasca (*Hartweg*, 421), Cordillera of Vera Cruz at 6000 feet (*Galeotti*, 99). Hb. Kew.

25. **Quercus elliptica,** Nee in Anal. Cienc. Nat. iii. p. 278; DC. Prodr. xvi. 2, p. 71; Liebm. Chênes de l'Amér. Trop. t. 6. figg. 4–6.

North Mexico, Sierra Madre (*Seemann*, 1975); South Mexico, Vera Cruz (*Linden*), 1052), Sierra Pueblo Nuevo, near Acapulco (*Hinds*), Orizaba, 4000 to 6000 feet (*Galeotti*), near Zimapan and Tixtala (*Nee*). Hb. Kew.

β. **microcarpa,** A. DC. Prodr. xvi. 2, p. 71; Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 184, et Chênes de l'Amér. Trop. p. 26, t. 6. fig. 3 (species).

Quercus perseæfolia, Liebm. loc. cit. p. 188, et Chênes, p. 27.

South Mexico, Vera Cruz (*Liebmann*); Guatemala (*Warscewicz*).

26. **Quercus emoryi,** Torr. in Emory's Rep. p. 152, t. 9; Bot. U.S. & Mex. Bound. Surv. p. 206.

Quercus pungens et *Q. hastata,* Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 171, et Chênes de l'Amér. Trop. p. 22, t. 45. figg. 1–3; DC. Prodr. xvi. 2, p. 36.

Texas; New Mexico; Arizona. — North Mexico, Sonora (*Schott*), Chihuahua (*Thurber*). Hb. Kew.

27. **Quercus eugeniæfolia,** Liebm. in Overs. K. Dansk. Videnskab. Selsk. Forhandl. 1854, p. 185; Chênes de l'Amér. Trop. p. 26; DC. Prodr. xvi. 2, p. 76.

Guatemala and Costa Rica (*Warscewicz*).

28. **Quercus excelsa,** Liebm. in Overs. K. Dansk. Videnskab. Selsk. Forhandl. 1854, p. 174, et Chênes de l'Amér. Trop. p. 23, t. 30. figg. 3–8; DC. Prodr. xvi. 2, p. 76.

South Mexico, Matlaluca, Vera Cruz (*Liebmann*). Hb. Kew.

29. **Quercus flavida,** Liebm. in Overs. K. Dansk. Videnskab. Selsk. Forhandl. 1854, p. 178, et Chênes de l'Amér. Trop. p. 24, t. 2. fig. 4; DC. Prodr. xvi. 2, p. 76.

South Mexico, Chinantla, Puebla, 7000 to 8000 feet (*Liebmann*). Hb. Kew.

30. **Quercus floccosa,** Liebm. in Overs. K. Dansk. Videnskab. Selsk. Forhandl. 1854, p. 178, et Chênes de l'Amér. Trop. p. 24, t. D; DC. Prodr. xvi. 2, p. 77.

South Mexico, peak of Orizaba, 8000 to 10,000 feet (*Liebmann*).

31. **Quercus fulva,** Liebm. in Overs. K. Dansk. Videnskab. Selsk. Forhandl. 1854, p. 183, et Chênes de l'Amér. Trop. p. 25, t. 2. fig. 3; Seem. Bot. Voy. 'Herald,' p. 333; DC. Prodr. xvi. 2, p. 77.

North Mexico, Sierra Madre (*Seemann*, 1973). Hb. Kew.

32. **Quercus galeottii,** Mart. in Bull. Acad. Brux. x. (reprint, p. 12); DC. Prodr. xvi. 2, p. 26.

South Mexico, near Santiago de Huatusco, 2500 to 5000 feet (*Galeotti*, 126), San Bartolomé (*Liebmann*). Hb. Kew.

33. **Quercus gambelii,** Nutt. in Journ. Acad. Sc. Philad. n. ser. i. p. 179; Torr. in Sitgr. Rep. p. 172 et t. 18, et Bot. U.S. & Mex. Bound. Surv. p. 205; DC. Prodr. xvi. 2, p. 23.

New Mexico.—North Mexico?

34. **Quercus germana,** Cham. et Schl. in Linnæa, v. p. 78; DC. Prodr. xvi. 2, p. 77; Liebm. Chênes de l'Amér. Trop. t. H et t. 37. fig. 1.

South Mexico, near Jalapa, Vera Crnz (*Schiede & Deppe; Linden*, 19).

35. **Quercus ghiesbreghtii,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 5); DC. Prodr. xvi. 2, p. 31; Liebm. Chênes de l'Amér. Trop. t. 21.

South Mexico, peak of Orizaba, 7000 to 8000 feet (*Galeotti*, 128), Totutla (*Liebmann*). Hb. Kew.

36. **Quercus glabrescens,** Benth. Pl. Hartw. p. 56, et p. 348, excl. syn.; DC. Prodr. xvi. 2, p. 34.

South Mexico, without locality, but probably from Real del Monte (*Hartweg*, 428), Chinantla, Oaxaca (*Liebmann*). Hb. Kew.

β. **integrifolia,** A. DC. Prodr. xvi. 2, p. 35.

South Mexico, peak of Orizaba, 8000 to 10,000 feet (*Liebmann*). Hb. Kew.

37. **Quercus glaucescens,** Humb. et Bonpl. Pl. Æquin. ii. p. 29, t. 78; DC. Prodr. xvi. 2, p. 77.

South Mexico, between La Venta de la Mojonera and Acaguisotla (*Humboldt & Bonpland*).

38. **Quercus glaucoides,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2); DC. Prodr. xvi. 2, p. 31; Liebm. Chênes de l'Amér. Trop. t. H, et t. 34. figg. 1–9.

South Mexico, Misteca Alta, 7000 feet (*Galeotti*, 103), Cerro de San Felipe (*Liebmann*). Hb. Kew.

39. **Quercus grahami,** Benth. Pl. Hartw. p. 57; DC. Prodr. xvi. 2, p. 78.

South Mexico, without locality (*Graham*). Hb. Kew.

40. **Quercus grandis,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 183, et Chênes de l'Amér. Trop. p. 25, t. 4. figg. 1, 2; DC. Prodr. xvi. 2, p. 65.

Guatemala (*Warscewicz*).

41. **Quercus granulata,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 186, et Chênes de l'Amér. Trop. p. 26, t. E; DC. Prodr. xvi. 2, p. 70.

Costa Rica. Volcan de Irazu (*Œrsted*).

42. **Quercus guatemalensis,** A. DC. Prodr. xvi. 2, p. 78.

Quercus turbinata, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 186, et Chênes de l'Amér. Trop. p. 26.

Guatemala (*Warscewicz*).

43. **Quercus insignis,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 12); DC. Prodr. xvi. 2, p. 25; Liebm. Chênes de l'Amér. Trop. t. K, et tt. 28, 29.

South Mexico, San Bartolomé (*Liebmann*), peak of Orizaba, 7000 to 9500 feet (*Galeotti*, 123, 124, 125). Hb. Kew.

44. **Quercus jurgensenii,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 188, et Chênes de l'Amér. Trop. p. 27, t. 33. figg. 47–49; DC. Prodr. xvi. 2, p. 78.

South Mexico, Chinantla, Puebla (*Liebmann*).

45. **Quercus læta,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 179, et Chênes de l'Amér. Trop. t. 37. fig. 2; DC. Prodr. xvi. 2, p. 29; Seem. Bot. Voy. 'Herald,' p. 332.

Quercus obtusata, Benth. Pl. Hartw. p. 55, non Humb. et Bonpl.

North Mexico, Sierra Madre (*Seemann*, 1971); South Mexico, Grande (*Hartweg*, 419). Hb. Kew.

46. **Quercus lanceolata,** Humb. et Bonpl. Pl. Æquin. ii. p. 34, t. 81; DC. Prodr. xvi. 2, p. 69; Liebm. Chênes de l'Amér. Trop. t. C et t. 22. fig. 4.

South Mexico, between Moran and Santa Rosa (*Humboldt & Bonpland*).

47. **Quercus lancifolia,** Cham. et Schl. in Linnæa, v. p. 78; DC. Prodr. xvi. 2, p. 78.

South Mexico, near El Molino de la Pedreguera (*Schiede & Deppe*), Dos Puentes and San Bartolomé (*Liebmann*). Hb. Kew.

Liebmann's specimens may belong to another species.

48. **Quercus lanigera,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 8); DC. Prodr. xvi. 2, p. 73; Liebm. Chênes de l'Amér. Trop. t. E.

South Mexico, Misteca Alta &c., 6500 to 8000 feet (*Galeotti*, 104).

49. **Quercus laurina,** Humb. et Bonpl. Pl. Æquin. ii. p. 32, t. 80; DC. Prodr. xvi. 2, p. 58.

South Mexico, near Moran (*Humboldt & Bonpland*).

Several other specimens are referred to this species in Kew herbarium.

50. **Quercus laxa,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 181, et Chênes de l'Amér. Trop. p. 25, t. 37. fig. 3; DC. Prodr. xvi. 2, p. 28; Seem. Bot. Voy. 'Herald,' p. 333.

North Mexico, Sierra Madre (*Seemann*, 1967). Hb. Kew.

51. **Quercus leiophylla,** A. DC. Prodr. xvi. 2, p. 71; Liebm. Chênes de l'Amér. Trop. t. K et t. 32.

South Mexico, Dos Puentes and San Bartolomé (*Liebmann*). Hb. Kew.

52. **Quercus linguæfolia,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 180, et Chênes de l'Amér. Trop. p. 25, t. E; DC. Prodr. xvi. 2, p. 70.

South Mexico, Cuesta de Lachopa, Oaxaca (*Liebmann*). Hb. Kew.

53. **Quercus lutescens,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 11); DC. Prodr. xvi. 2, p. 38.

South Mexico, around Mirador and Zacuapan (*Galeotti*, 91).

54. **Quercus magnoliæfolia,** Nee in Anal. Cienc. Nat. iii. p. 268; DC. Prodr. xvi. 2, p. 26.

South Mexico, between Chilpancingo and Tixtala (*Nee*).

β. **lutea,** A. DC. Prodr. xvi. 2, p. 27; Nee in Anal. Cienc. Nat. iii. p. 269 (species).
South Mexico, with var. α (*Nee*).

γ. **? macrophylla,** A. DC. loc. cit.; Nee in Anal. Cienc. Nat. iii. p. 274 (species).
Quercus resinosa, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 182; Seem. Bot. Voy. 'Herald,' p. 333.
North Mexico, Sierra Madre (*Seemann*, 1972); South Mexico, near Tixtala (*Nee*). Hb. Kew.

55. **Quercus microphylla,** Nee in Anal. Cienc. Nat. iii. p. 264; DC. Prodr. xvi. 2, p. 35.
Quercus repanda, Benth. Pl. Hartw. p. 55, non Humb. et Bonpl.
North Mexico, Cosiquiriachi (*Wislizenus*); South Mexico, Real del Monte (*Hartweg*, 425), Montezuma, near Cuantepec (*Bourgeau*, 645, 1007), near Guanajuato (*Nee*). Hb. Kew.

56. **Quercus mollis,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 8); DC. Prodr. xvi. 2, p. 78.
South Mexico, Misteca Alta, Oaxaca, 6500 to 7500 feet (*Galeotti*, 102).

57. **Quercus nectandræfolia,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 175, et Chênes de l'Amér. Trop. p. 23, t. 5; DC. Prodr. xvi. 2, p. 71.
South Mexico, Mirador, Totutla, and San Bartolomé (*Liebmann*). Hb. Kew.

58. **Quercus nitens,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 9); DC. Prodr. xvi. 2, p. 68; Liebm. Chênes de l'Amér. Trop. t. ii. figg. 2–6.
Quercus commutata, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 177.
Quercus affinis, Scheidw. in Hort. Belg. Oct. 1837, t. 17 ?
South Mexico, near Real del Monte at 7000 feet (*Galeotti*, 115), Vera Cruz (*Linden*, 21). Hb. Kew.

β. **podocarpa,** A. DC. Prodr. xvi. 2, p. 69; Liebm. Chênes de l'Amér. Trop. t. 10.
Quercus commutata, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 177, pro parte.
South Mexico, Chinantla, Puebla (*Liebmann*). Hb. Kew.

γ. **ocoteæfolia,** A. DC. loc. cit.; Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 176 (species), et Chênes de l'Amér. Trop. t. E et t. 9. figg. 1–3.
South Mexico, Talea, Oaxaca, 4000 to 5000 feet (*Liebmann*).

δ. **major,** A. DC. loc. cit.; Liebm. Chênes de l'Amér. Trop. t. ii. figg. 7–12.
South Mexico, Alpatlahua, 7500 feet (*Liebmann*). Hb. Kew.

ε. **subintegra,** A. DC. loc. cit.
Quercus lancifolia, Benth. Pl. Hartw. p. 55, non Cham. et Schl.
South Mexico, Zacualtipan (*Hartweg*). Hb. Kew.

59. **Quercus oaxacana,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 178, et Chênes de l'Amér. Trop. p. 24, t. 23; DC. Prodr. xvi. 2, p. 79.

Quercus lanceolata, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 5), non Humb. et Bonpl.

South Mexico, Cordillera of Oaxaca at 2800 feet (*Galeotti*, 108). Hb. Kew.

60. **Quercus obtusata,** Humb. et Bonpl. Pl. Æquin. ii. p. 26, t. 76; DC. Prodr. xvi. 2, p. 27.

Quercus affinis, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 14).

South Mexico, near Ario (*Humboldt & Bonpland*), between Mirador and Zacuapan, 2500 to 3000 feet (*Galeotti*, 90).

β. **pandurata,** A. DC. Prodr. xvi. 2, p. 27; Humb. et Bonpl. Pl. Æquin. ii. p. 28, t. 77 (species).

South Mexico, near Ario (*Humboldt & Bonpland*).

γ. **hartwegi,** A. DC. loc. cit.; Benth. Pl. Hartw. p. 56 (species); Liebm. Chênes de l'Amér. Trop. t. I.

Quercus ambigua, Humb. et Bonpl. Pl. Æquin. ii. p. 51, t. 93, non Michx.

Quercus bonplandiana, Sweet, ex Steud. Bot. Nomencl.

Quercus nudinervis, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 182; Seem. Bot. Voy. 'Herald,' p. 334.

North Mexico, Cerro de Pinal (*Seemann*, 1457); South Mexico, Tuspan, near Anganguio (*Hartweg*), near Santa Fé (*Bourgeau*, 644), Tula to Tampico (*Berlandier*). Hb. Kew.

61. **Quercus omissa,** A. DC. Prodr. xvi. 2, p. 28; Liebm. Chênes de l'Amér. Trop. t. 18. figg. 5–8.

North Mexico, Sierra Madre (*Seemann*, 1969). Hb. Kew.

This is named *Q. dysophylla* in Kew herbarium.

62. **Quercus orizabæ,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 189; Chênes de l'Amér. Trop. p. 27; DC. Prodr. xvi. 2, p. 79.

South Mexico, peak of Orizaba, 8000 to 10,000 feet (*Liebmann*). Hb. Kew.

63. **Quercus polymorpha,** Cham. et Schl. in Linnæa, v. p. 78; DC. Prodr. xvi. 2, p. 28; Liebm. Chênes de l'Amér. Trop. t. 38.

Quercus petiolaris, Benth. Pl. Hartw. p. 55, et p. 348.

Quercus varians, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 7).

Quercus tuberculata, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 181; Seem. Bot. Voy. 'Herald,' p. 332.

North Mexico, Sierra Madre (*Seemann*, 1970); South Mexico, Mirador (*Liebmann*), Chilotepec (*Linden*, 15), near Bolaños (*Hartweg*), Cordillera of Vera Cruz at 2800 feet (*Galeotti*, 92), Vera Cruz to Orizaba (*Müller*, 1747, 1597). Hb. Kew.

64. **Quercus pulchella,** Humb. et Bonpl. Pl. Æquïn. ii. p. 44, t. 88; DC. Prodr. xvi. 2, p. 34.

South Mexico, between Guanajuato and Santa Rosa (*Humboldt & Bonpland*).

65. **Quercus repanda,** Humb. et Bonpl. Pl. Æquin. ii. p. 31, t. 79; DC. Prodr. xvi. 2, p. 35.

South Mexico, between Real del Monte and Moran (*Humboldt & Bonpland*).

66. **Quercus reticulata,** Humb. et Bonpl. Pl. Æquin. ii. p. 40, t. 86; DC. Prodr. xvi. 2, p. 33; Liebm. Chênes de l'Amér. Trop. t. 34. figg. 10–16 (var. *crassifolia*), et t. 35, figg. 15–22.

Quercus spicata, Humb. et Bonpl. Pl. Æquin. ii. p. 46, t. 89; Liebm. loc. cit. t. 35. figg. 1–14.
Quercus decipiens, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 7).

South Mexico, Cerro de las Nabujas and between Guanajuato and Santa Rosa (*Humboldt & Bonpland*), Yavezia, Oaxaca, and peak of Orizaba at 8000 to 10,000 feet (*Liebmann*), peak of Orizaba at 3500 to 5000 feet, and near Mirador at 3000 feet (*Galeotti*, 131), Tlalpujahua (*Hartweg*), near San Angel, Cuantepec, and San Nicolas (*Bourgeau*, 272, 1134, 1142). Hb. Kew.

β. **greggii,** A. DC. Prodr. xvi. 2, p. 34.
North Mexico, Saltillo (*Gregg*).

67. **Quercus rugulosa,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2); DC. Prodr. xvi. 2, p. 74.

South Mexico, near Real del Monte (*Galeotti*, 116).

68. **Quercus salicifolia,** Nee in Anal. Cienc. Nat. iii. p. 265; DC. Prodr. xvi. 2, p. 30; Liebm. Chênes de l'Amér. Trop. t. 20. fig. 3.

South Mexico, near Acapulco (*Nee*), Oaxaca (*Liebmann*)? Hb. Kew.

69. **Quercus sapotæfolia,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 185, et Chênes de l'Amér. Trop. p. 26; DC. Prodr. xvi. 2, p. 79.

South Mexico, Huatusco (*Ghiesbreght*, 119); Guatemala, Cuesta de Incensio (*Skinner*). Hb. Kew.

70. **Quercus sartorii,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 177; Chênes de l'Amér. Trop. p. 24, t. B et t. 19; DC. Prodr. xvi. 2, p. 30.

South Mexico, near Totutla and Alpatlahua, Vera Cruz (*Liebmann*), Sierra Zongolica (*Botteri*, 952). Hb. Kew.

71. **Quercus scytophylla,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 180; Chênes de l'Amér. Trop. p. 24, t. 17; DC. Prodr. xvi. 2, p. 57.

South Mexico, between San Pedro Nolasco and Castresana, Oaxaca, at 7500 feet (*Liebmann*). Hb. Kew.

72. **Quercus seemannii,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 188, et Chênes de l'Amér. Trop. p. 26, t. 20. figg. 1, 2; DC. Prodr. xvi. 2, p. 30; Seem. Bot. Voy. 'Herald,' p. 251.

PANAMA, Veraguas (*Bridges*; *Seemann*, 1228). Hb. Kew.

73. **Quercus segoviensis,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 186, et Chênes de l'Amér. Trop. t. I, p. 26; DC. Prodr. xvi. 2, p. 79.

NICARAGUA, near Segovia (*Œrsted*).

74. **Quercus serra,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 174, et Chênes de l'Amér. Trop. t. B, p. 23; DC. Prodr. xvi. 2, p. 80.

SOUTH MEXICO, between Huitamalco and Tiuzutlan, Puebla (*Liebmann*).

75. **Quercus sideroxyla,** Humb. et Bonpl. Pl. Æquin. ii. p. 39, t. 85; DC. Prodr. xvi. 2, p. 58.

SOUTH MEXICO, near Villalpanda and Santa Rosa (*Humboldt & Bonpland*).

76. **Quercus skinneri,** Benth. Pl. Hartw. p. 90; DC. Prodr. xvi. 2, p. 64; Hook. Ic. Pl. t. 402; Liebm. Chênes de l'Amér. Trop. t. B, et t. 3.

SOUTH MEXICO, Chinantla, Oaxaca (*Liebmann*); GUATEMALA, Acatenango, Medio Monte, and Quezaltenango (*Hartweg*, 615; *Skinner*; *Warscewicz*). Hb. Kew.

77. **Quercus sororia,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 175, et Chênes de l'Amér. Trop. p. 23, t. 6. figg. 1–2; DC. Prodr. xvi. 2, p. 80.

SOUTH MEXICO, Chinantla, Oaxaca (*Liebmann*).

78. **Quercus splendens,** Nee in Anal. Cienc. Nat. iii. p. 275; DC. Prodr. xvi. 2, p. 57; Liebm. Chênes de l'Amér. Trop. t. 9. figg. 6–7.

Quercus stipularis, Humb. et Bonpl. Pl. Æquin. ii. p. 47, t. 90.

SOUTH MEXICO, near Tixtala (*Nee*), Los Organos de Octopan (*Humboldt & Bonpland*).

β. **pallidior,** A. DC. Prodr. xvi. 2, p. 57.

Quercus crassifolia, Benth. Pl. Hartw. p. 56, non Humb. et Bonpl.

SOUTH MEXICO, around Real del Monte (*Hartweg*), Perote (*Hahn*). Hb. Kew.

79. **Quercus strombocarpa,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 176, et Chênes de l'Amér. Trop. p. 24, t. 27; DC. Prodr. xvi. 2, p. 25.

SOUTH MEXICO, San Bartolomé (*Liebmann*). Hb. Kew.

80. **Quercus tlalpuxahuensis,** A. DC. Prodr. xvi. 2, p. 29.

Quercus salicifolia, Benth. Pl. Hartw. p. 56, non Nee.

SOUTH MEXICO, Tlalpujahua (*Hartweg*, 430; *Graham*, 336). Hb. Kew.

81. **Quercus tomentosa,** Willd. Sp. Pl. iv. p. 437; DC. Prodr. xvi 2, p. 33.

Quercus peduncularis, Nee in Anal. Cienc. Nat. iii. p. 270.

Quercus callosa, Benth. Pl. Hartw. p. 91.

α. **communis,** A. DC. Prodr. xvi. p. 33; Liebm. Chênes de l'Amér. Trop. t. I, et t. 33. figg. 10–18.

South Mexico, Comitan (*Hartweg*), near Mirador and Consoquitla (*Liebmann*); Guatemala (*Warscewicz*). Hb. Kew.

β. **bullata,** A. DC. loc. cit.

South Mexico, Mirador (*Linden*, 20); Guatemala (*Warscewicz*). Hb. Kew.

γ. **diversifolia,** A. DC. loc. cit.; Nee in Anal. Cienc. Nat. iii. p. 270 (species).

South Mexico, between Chalma and Santa Rosa (*Nee*).

δ. **abbreviata,** A. DC. loc. cit.

Guatemala and Costa Rica (*Warscewicz*). Hb. Kew.

82. **Quercus totutlensis,** A. DC. Prodr. xvi. 2, p. 62; Liebm. Chênes de l'Amér. Trop. t. 16.

South Mexico, Totutla (*Liebmann*). Hb. Kew.

83. **Quercus virens,** Ait. Hort. Kew. ed. 1, iii. p. 356; DC. Prodr. xvi. 2, p. 37; Michx. Chênes, tt. 10 et 11; Liebm. Chênes de l'Amér. Trop. t. 33. figg. 50–57, et t. 43.

Quercus oleoides, Cham. et Schl. in Linnæa, v. p. 79.

Quercus retusa, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 187, et Chênes de l'Amér. Trop. p. 26.

Quercus cubana, A. Rich. in Ram. de la Sagra, Fl. Cub. iii. p. 230.

Virginia southward to Florida and Texas.—North Mexico, Monterey, Nuevo Leon (*Berlandier*, 1406); South Mexico, Jalapa, at 2800 feet (*Galeotti*, 91 & 98), Mirador (*Liebmann*), Montecinos (*Linden*, 24), Totutla and Jicaltepec (*Liebmann*); Guatemala (*Friedrichsthal*); Costa Rica (*Warscewicz*).—Cuba. Hb. Kew.

84. **Quercus warscewiczii,** Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 187, et Chênes de l'Amér. Trop. p. 26, t. 30. figg. 1–2; DC. Prodr. xvi. 2, p. 65; Seem. Bot. Voy. 'Herald,' p. 252.

Quercus oocarpa, Liebm. in Overs. K. Dansk. Vidensk. Selsk. Forhandl. 1854, p. 184, et Chênes de l'Amér. Trop. p. 25.

Guatemala and Costa Rica (*Warscewicz*); Panama, Boquete Veraguas (*Seemann*, 1230, 1572). Hb. Kew.

85. **Quercus wislizenii,** A. DC. Prodr. xvi. 2, p. 67.

North Mexico, Chihuahua, near Cosiquiriachi (*Wislizenus*).

86. **Quercus xalapensis,** Humb. et Bonpl. Pl. Æquin. ii. p. 24, t. 75; DC. Prodr. xvi. 2, p. 64; Liebm. Chênes de l'Amér. Trop. t. 4. figg. 3–11.

South Mexico, Mirador (*Linden*, 18; *Liebmann*), Jalapa (*Humboldt & Bonpland*, *Galeotti*), Huatusco (*Ghiesbreght*); Guatemala or Costa Rica (*Warscewicz*). Hb. Kew.

Series VIII. ORDINES ANOMÀLI.

Order CXXXII. SALICINEÆ.

Salicineæ, Benth. et Hook. Gen. Plant. iii. p. 411.

Trees and shrubs. Two genera and, according to different botanists, from 150 to 200 or even 300 species, generally dispersed in the north temperate and frigid regions, rarer within the tropics, both north and south; one occurs in South Africa; and one of the American species extends southward to Chili. The Order is altogether unrepresented in Australasia, the Malayan Archipelago, and the Pacific Islands.

1. SALIX.

Salix, Linn. Gen. Plant. n. 1098; Benth. et Hook. Gen. Plant. iii. p. 411; Anders. in DC. Prodr. xvi. 2, p. 191.

This genus covers the whole area of the Order. Species about 160, according to Andersson.

1. **Salix bonplandiana,** Kunth in H. B. K. Nov. Gen. et Sp. ii. p. 24, tt. 101 et 102; DC. Prodr. xvi. 2, p. 200.

South Mexico, near Moran, Cabrera, Omitlan, and Pachuca, 7600 to 8100 feet (*Humboldt & Bonpland*), Vera Cruz to Orizaba (*Müller*, 918), Antigua, Vera Cruz (*Linden*, 11), Tehuacan at 5000 feet (*Galeotti*, 67), valley of Mexico (*Bourgeau*, 423; *Schaffner*, 907). Hb. Kew.

β. **pallida,** Anders. Monogr. Sal. p. 18, et in DC. Prodr. xvi. 2, p. 200; H. B. K. Nov. Gen. et Sp. ii. p. 25 (species).

South Mexico, between Venta de Acaguisotla and Mazatlan (*Humboldt & Bonpland*).

2. **Salix cana,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 4).

South Mexico, peak of Orizaba at 11,000 to 12,000 feet (*Galeotti*, 69).

This, as well as the other species described by the same authors, was not taken up by Andersson; but they are probably all reducible to previously established species.

3. **Salix humboldtiana,** Willd. Sp. Pl. iv. p. 657; H. B. K. Nov. Gen. et Sp. ii. p. 22, tt. 99 et 100; DC. Prodr. xvi. 2, p. 199 (varietates).

Salix oxyphylla et *S. falcata,* H. B. K. loc. cit. pp. 23 et 24.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 841)? South Mexico, near Chilpancingo (*Humboldt & Bonpland*), banks of rivers near Vera Cruz (*Galeotti*, 66).—Colombia to South Brazil and Chili, and in the West Indies. Hb. Kew.

4. **Salix hartwegi,** Benth. Pl. Hartw. p. 52.

South Mexico, Anganguio (*Hartweg*, 390), Real del Monte and Moran at 7500 to 8500 feet (*Galeotti*, 73). Hb. Kew.

Andersson (in DC. Prodr. xvi. 2, p. 236) doubtingly reduces this to *S. humilis*, Marsh., a species having a wide range in North America.

5. **Salix latifolia,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 4).

South Mexico, peak of Orizaba at 12,000 feet (*Galeotti*, 70).

Apparently not taken up by Andersson in De Candolle's 'Prodromus.'

6. **Salix nigra,** Marsh. Arbust. Amer. p. 293.

δ. **wrightii,** Anders. Monogr. Sal. p. 22, et in DC. Prodr. xvi. 2, p. 201, et in Öfvers. Vet. Akad. Förh. 1858, p. 115 (species).

North Mexico, near Lake Santa Maria, Chihuahua (*Wright*, 1877); South Mexico, Sierra San Pedro Nolasco (*Jurgensen*, 307). Hb. Kew.

This species, of which Andersson distinguishes four varieties, ranges from Canada to Florida and Texas.

7. **Salix paradoxa,** H. B. K. Nov. Gen. et Sp. ii. p. 25.

South Mexico, near Moran, at about 8000 feet (*Humboldt & Bonpland*), Gasimalpa (*Schaffner*)?

8. **Salix stipulacea,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 3).

South Mexico, banks of the Rio Grande de Mextitlan, near the district of Real del Monte, at 4500 feet (*Galeotti*, 75).

See remarks under *S. cana*.

9. **Salix taxifolia,** H. B. K. Nov. Gen. et Sp. ii. p. 22; DC. Prodr. xvi. 2, p. 215. *Salix microphylla,* Cham. et Schl. in Linnæa, vi. p. 354; Hook. et Arn. Bot. Beech. Voy. p. 310, t. 70.

Texas; New Mexico; California?—North Mexico, Chihuahua (*Potts*); South Mexico, Cordillera of Vera Cruz at 2000 to 4000 feet (*Galeotti*, 68), region of Orizaba (*Müller*, 917; *Bilimek*, 402), Zacatecas (*Coulter*, 1410), along the torrents of San Cornelio (*Hartweg*, 391), sandbanks of the Tecoluta near San Pablo (*Schiede & Deppe*); Guatemala, on the river Pinula, on the road from Guatemala to Amatitlan (*Skinner*). Hb. Kew.

2. POPULUS.

Populus, Linn. Gen. Plant. n. 1123; Benth. et Hook. Gen. Plant. iii. p. 412.

About twenty species, inhabiting Europe, Asia, and North America.

1. **Populus balsamifera,** Linn. Sp. Pl. p. 1464; DC. Prodr. xvi. 2, p. 329 (varietates); Nouv. Duham. ii. t. 50.

Canada southward.—North Mexico, on the Mimbres, within the old boundary (*Bigelow*). Also in Central Asia. Hb. Kew.

2. **Populus canadensis,** Desf. Cat. Hort. Par.

γ. **angustifolia,** Wesm. in DC. Prodr. xvi. 2, p. 329; James in Long's Exped. i. p. 497 (species); Torr. in Ann. Lyc. N. York, ii. p. 249; Nutt. Sylva, i. t. 16; Torr. Bot. U.S. & Mex. Bound. Surv. p. 204.

Oregon southward.—North Mexico, on the Mimbres, within the old boundary (*Bigelow*). Hb. Kew.

The other varieties of this species have a wide range in North America.

3. **Populus mexicana,** Wesm. in DC. Prodr. xvi. 2, p. 328.

South Mexico, road from Puebla to Real del Monte (*Berlandier*).

Parry and Palmer collected specimens of two species of *Populus* in the region of San Luis Potosi, one of which may be this species.

Order CXXXIII. LACISTEMACEÆ.

Lacistemaceæ, Benth. et Hook. Gen. Plant. iii. p. 412.

A monotypical Order of shrubs and small trees inhabiting Tropical America.

1. LACISTEMA.

Lacistema, Sw. Prodr. p. 12, et Fl. Ind. Occ. ii. p. 1091, t. 21; Benth. et Hook. Gen. Plant. iii. p. 413.

Sixteen species are enumerated, ranging from Mexico and the West Indies to Peru and Brazil, and most numerous in the last country.

1. **Lacistema myricoides,** Sw. Prodr. p. 12, et Fl. Ind. Occ. ii. p. 1093, t. 21; DC. Prodr. xvi. 2, p. 591; Schnizl. in Mart. Fl. Bras. iv. 1, p. 282, t. 81. fig. 3.

South Mexico, Mirador and Tlapacoyo (*Liebmann*); Guatemala (*Friedrichsthal*); Nicaragua (*Tate*, 353); Panama, *Chagres* (*Fendler*, 282).—Colombia to Peru and Brazil and in the West Indies. Hb. Kew.

[The Empetraceæ are a small Order of four dwarf shrubby species, referred to three genera. With the exception of one species in South-western Europe and the Azores, they are North-American; and one of them (*Empetrum nigrum*, L.) has a wide range in the arctic and alpine regions of the northern hemisphere, reappearing in the Andes of South America, and extending to Tierra del Fuego and Tristan d'Acunha.]

Order CXXXIV. CERATOPHYLLEÆ.

Ceratophylleæ, Benth. et Hook. Gen. Plant. iii. p. 415.

A monotypic Order of aquatic herbs.

1. CERATOPHYLLUM.

Ceratophyllum, Linn. Gen. Plant. n. 1065; Benth. et Hook. Gen. Plant. iii. p. 415.

Two species or distinct varieties, divided into eight or ten by some authors, united into one by others.

1. **Ceratophyllum demersum,** Linn. Sp. Pl. p. 1409; DC. Prodr. iii. p. 73; Cham. in Linnæa, iv. p. 504; Schnizl. Iconogr. ii. t. 83.

In fresh water nearly all over the world, including MEXICO and CENTRAL AMERICA. Hb. Kew.

GYMNOSPERMEÆ.

Order CXXXV. GNETACEÆ.

Gnetaceæ, Benth. et Hook. Gen. Plant. iii. p. 417.

This Order comprises the singular *Welwitschia mirabilis,* Hook. f., and the genera *Gnetum* and *Ephedra.* Of these there are about forty shrubby and arboreous species, widely spread in the tropics, rarer in temperate regions. *Gnetum* itself is represented by several species in tropical South America.

1. EPHEDRA.

Ephedra, Linn. Mant. p. 18. n. 1278; Benth. et Hook. Gen. Plant. iii. p. 419.

About thirty species have been described; but some of them were founded on very slight characters. They inhabit the south of Europe, temperate and subtropical Asia, and extratropical and Andine America, extending southward to Chili and Buenos Ayres.

1. **Ephedra antisyphilitica,** Berland., ex C. A. Mey. Monogr. Ephedr. p. 101; DC. Prodr. xvi. 2, p. 354; Torr. Bot. U.S. & Mex. Bound. Surv. p. 207.

TEXAS to CALIFORNIA.—NORTH MEXICO, Sierra Madre (*Palmer,* 1289), Rinconado Pass, Coahuila (*Thurber*), between Mapimi and Guajaquilla, Durango (*Gregg*). Hb. Kew.

2. **Ephedra,** sp.

NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer,* 855). Hb. Kew.

3. **Ephedra,** sp., Torr. in Bot. U.S. & Mex. Bound. Surv. p. 208.

NORTH MEXICO, Oja de Vaca (*Thurber*).

4. **Ephedra,** sp.

NORTH MEXICO, Sierra Madre (*Palmer,* 1288). Hb. Kew.

Order CXXXVI. CONIFERÆ.

Coniferæ, Benth. et Hook. Gen. Plant. iii. p. 420.

Trees and shrubs. Thirty-two genera, comprising about 300 species, for the greater part inhabiting temperate and mountainous regions, both in the north and in the south, often forming large forests; rarer in the tropics and in the frigid regions.

Tribe I. CUPRESSINEÆ.

Cupressineæ, Benth. et Hook. Gen. Plant. iii. p. 421.

Seven genera, with about seventy-five species, scattered over nearly the whole area of the order, except the tropics.

1. CUPRESSUS.

Cupressus, Linn. Gen. Plant. n. 1079; Benth. et Hook. Gen. Plant. iii. p. 427.

This genus numbers about twelve arboreous and shrubby species, inhabiting South-eastern Europe, Temperate Asia, and North America, Mexico included.

1. **Cupressus benthami,** Endl. Synop. Conif. p. 59; DC. Prodr. xvi. 2, p. 472.
Cupressus thurifera, Benth. Pl. Hartw. p. 57. n. 434, et Schl. in Linnæa, xii. p. 493, non H. B. K.
Cupressus excelsa, Schott, ex Carr. Conif. p. 128; Gord. Pinet. p. 58.
Cupressus ehrenbergii, Kze. in Linnæa, xx. p. 16?

North Mexico, Sierra Madre (*Seemann*, 2001), San Luis Potosi (*Virlet d'Aoust*); South Mexico, region of Orizaba (*Bourgeau*, 3258), Chinantla, Puebla at 7500 feet (*Liebmann*), Banco (*Hartweg*, 434); Guatemala (*Skinner*). Hb. Kew.

2. **Cupressus lindleyi,** Kl. in Endl. Synop. Conif. p. 59; DC. Prodr. xvi. 2, p. 471.
Cupressus thurifera, Lindl. Bot. Reg. 1839, ex Benth. Pl. Hartw. p. 57. n. 437.
Cupressus knightiana, Perry, ex Gord. Pinet. p. 61.
Cupressus coulteri, Forbes, Pinet. Woburn. p. 190?
Cupressus karwinskiana, Regel, Gartenfl. 1857, p. 346.

North Mexico, Sierra Madre (*Seemann*, 2000); South Mexico, between Tlalpujahua and Anganguio (*Hartweg*, 437), without locality (*Bates; Bilimek*), Tacubaya (*Bourgeau*), Toluca (*Heller*). Hb. Kew.

3. **Cupressus thurifera,** H. B. K. Nov. Gen. et Sp. ii. p. 3; DC. Prodr. xvi. 2, p. 473.
Cupressus uhdeana, Gord. Pinet. p. 71?
Chamæcyparis thurifera, Endl. Synop. Conif. p. 62.

South Mexico, Tasco and Tehuilotepec at 5500 feet (*Humboldt & Bonpland*), mountains of Orizaba and Real del Monte at 6000 to 7000 feet (*Uhde*). Hb. Kew.

2. JUNIPERUS.

Juniperus, Linn. Gen. Plant. n. 1134; Benth. et Hook. Gen. Plant. iii. p. 427.

About twenty-five shrubby and arboreous species, widely spread in the temperate and frigid regions of the northern hemisphere, and extending to the mountains within the tropics.

1. **Juniperus flaccida,** Schl. in Linnæa, xii. p. 495; DC. Prodr. xvi. 2, p. 492.
Juniperus fœtida θ. flaccida, Spach in Ann. Sc. Nat. série 2, xvi. p. 300.
Sabina flaccida, Antoine, Conif. tt. 49 et 50.

North Mexico, Sierra Madre, Coahuila (*Palmer*, 1294), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 853); South Mexico, Regla 6000 to 8000 feet (*Hartweg*, 435; *Ehrenberg*), Real del Monte (*Coulter*, 1419), Cordillera of Oaxaca (*Galeotti*, 10), Rio de las Vueltas, Oaxaca (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 1593), Atotonilco el Chico (*Schiede*). Hb. Kew.

2. **Juniperus mexicana,** Schiede in Linnæa, v. p. 77, et xii. p. 494; Parlat. in DC. Prodr. xvi. 2, p. 491.
Juniperus deppeana, Steud. Nomencl. Bot. ed. 2, p. 835.
Juniperus gigantea, Roezl, Cat. p. 8; Gord. Pinet. p. 122.
Sabina mexicana, Antoine, Conif. p. 38, t. 51, et *S. gigantea,* ead. ibid. p. 36, tt. 48 et 50.

North Mexico, Chihuahua (*Wislizenus*), Sierra Madre (*Seemann* ex *Parlatore*); South Mexico, Llanos de Perote (*Schiede & Deppe*), Mineral del Monte 8000 to 10,000 feet (*Ehrenberg*), Real del Monte (*Hartweg*, 433), near Tenancingo 7000 to 8000 feet (*Roezl*). Hb. Kew.

3. **Juniperus pachyphlæa,** Torr. in Whipple's Rep. p. 142, et Bot. U.S. & Mex. Bound. Surv. p. 210; DC. Prodr. xvi. 2, p. 490.

New Mexico.—North Mexico, Sonora and Chihuahua (ex *Torrey*).

4. **Juniperus tetragona,** Schl. in Linnæa, xii. p. 495; DC. Prodr. xvi. 2, p. 491.
Cupressus sabinoides, H. B. K. Nov. Gen. et Sp. ii. p. 3.
Juniperus mexicana, Spreng. Syst. Veg. iii. p. 909.
Sabina tetragona, Antoine, Conif. p. 40, t. 53.

North Mexico, Sierra Madre, Coahuila (*Palmer*, 1295; *Seemann*, 2001, in part), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 851, 852); South Mexico, peak of Orizaba, limits of vegetation, 12,000 to 14,000 feet (*Galeotti*, 11; *Liebmann*; *Linden*, 6), between Real del Monte and Chico (*Hartweg*, 436), Acapulco (*Liebmann*). Hb. Kew.

5. **Juniperus virginiana,** Linn. Sp. Pl. p. 1471; DC. Prodr. xvi. 2, p. 488.

North America from Canada to Texas and Florida.—South Mexico, Cuernavaca (*Bilimek*, 397)? Hb. Kew.

Tribe II. TAXODIEÆ.

Taxodieæ, Benth. et Hook. Gen. Plant. iii. p. 422.

Five genera and about a dozen species, inhabiting North America, China and Japan, and Tasmania.

3. TAXODIUM.

Taxodium, L. C. Rich. in Ann. Mus. Par. xvi. p. 298, et Conif. p. 143, t. 10; Benth. et Hook. Gen. Plant. iii. p. 429.

Three arboreous species, one of which inhabits the south-eastern States of N. America, and is very closely allied to the Mexican. The third, a native of China, is imperfectly known.

1. **Taxodium mucronatum,** Ten. Osserv. su di una Pianta Conif. del genre Taxod. tt. 1 et 2; DC. Prodr. xvi. 2, p. 441.

Taxodium distichum, H. B. K. Nov. Gen. et Sp. ii. p. 4, non Rich.; Seem. Bot. Voy. 'Herald,' p. 335.

Taxodium montezumæ, Dcne. in Bull. Soc. Bot. de France, i. p. 71.

Taxodium mexicanum, Carr. Conif. p. 147.

NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 850), Sierra Madre (*Seemann*, 2002), Coahuila and Nuevo Leon (*Berlandier*); SOUTH MEXICO, Chapultepec &c. (*Humboldt & Bonpland*), Misteca Alta at 7000 feet, and plain of Oaxaca (*Galeotti*, 5), Santa Maria, valley of Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 237), diffused over the whole tableland near streams and rivers (*Seemann*). Hb. Kew.

Tribe III. TAXEÆ.

Taxeæ, Benth. et Hook. Gen. Plant. iii. p. 422.

Six genera and about twenty species, inhabiting the north and south temperate regions and the Malayan archipelago.

4. TAXUS.

Taxus, Linn. Gen. Plant. n. 1135; Benth. et Hook. Gen. Plant. iii. p. 431.

About six or eight species, or varieties of one species, widely dispersed in the temperate regions of the northern hemisphere.

1. **Taxus globosa,** Schl. in Linnæa, xii. p. 476; DC. Prodr. xvi. 2, p. 501.

SOUTH MEXICO, Real del Monte (*Ehrenberg*), without locality (*Sallé*), Vera Cruz (*Linden*). Hb. Kew.

[Tribe IV. PODOCARPEÆ and V. ARAUCARIEÆ are not known to be represented within our limits, though the genus *Podocarpus*, which is generally dispersed in the tropics, including the West Indies and South America, from Brazil and Peru to Venezuela and Colombia, may be expected to occur in the southern provinces.]

Tribe IV. ABIETINEÆ.

Abietineæ, Benth. et Hook. Gen. Plant. iii. p. 423.

This tribe comprises about 120 species, referred to seven genera. They are restricted to the northern hemisphere.

5. PINUS.

Pinus, Linn. Gen. Plant. n. 1077, pro parte ; Benth. et Hook. Gen. Plant. iii. p. 438.

There are about seventy species, generally spread in the temperate regions of the northern hemisphere, and extending to the mountains of the tropics in Eastern Asia, the West Indies, and Central America. The Mexican species are still very imperfectly known.

1. **Pinus arizonica,** Engelm. in Rothr. Bot. Arizona, p. 260.

ARIZONA.—NORTH MEXICO, mountains of Santa Rita, within the old boundary.

2. **Pinus ayacahuite,** Ehrenb. in Linnæa, xii. p. 492; DC. Prodr. xvi. 2, p. 406.

Pinus strobiformis, Engelm. Bot. Wisliz. Exped. p. 18.
Pinus don pedri, P. hamata, P. veitchii et *P. popocatepetlii,* Roezl, Cat. Grain. Conif. pp. 31–33.
Pinus buonapartea, P. colorado et *P. durangensis,* Roezl, Gord. Pinet. p. 218, et Suppl. p. 75.
Pinus loudoniana, Gord. Pinet. p. 230.

NORTH MEXICO, Sierra Madre (*Roezl*), Cosiquiriachi (*Wislizenus*); SOUTH MEXICO, Popocateptl 11,000 to 12,000 feet (*Roezl*), Real del Monte, Oaxaca and Chiapas (*Ehrenberg*), without locality (*Uhde*); GUATEMALA, without locality (*Godman & Salvin*), Quezaltenango &c. (ex *Gordon*). Hb. Kew.

3. **Pinus cembroides,** Zucc. Pl. Nov. fasc. i. p. 392; Flora, 1832, ii. Beibl. p. 93; DC. Prodr. xvi. 2, p. 397; Benth. Pl. Hartw. p. 58; Gord. in Journ. Hort. Soc. Lond. i. p. 236, cum ic. xylogr.

Pinus fertilis, Roezl, ex Gord. Pinet. Suppl. p. 76.
Pinus llaveana, Schiede in Linnæa, xii. p. 488; Antoine, Conif. p. 36, t. 16. fig. 1; Forbes, Pinet. Woburn. p. 49, t. 17; Torr. Bot. U.S. & Mex. Bound. Surv. p. 208, t. 53.
Pinus osteosperma, Engelm. Bot. Wisliz. Exped. p. 5.

NORTH MEXICO, Saltillo (*Gregg*), Buena Vista and about Saltillo (*Wislizenus*), Sierra Madre (*Seemann*), region of San Luis Potosi at 6000 to 8000 feet (*Parry & Palmer*, 846); SOUTH MEXICO, Zimapan (*Hartweg*), between Zimapan and Real del Oro at 8000 to 10,000 feet (*Schiede*). Hb. Kew.

4. **Pinus chihuahuana,** Engelm. Bot. Wisliz. Exped. p. 19; DC. Prodr. xvi. 2, p. 397; Engelm. Rev. Gen. Pinus, p. 21.

NORTH MEXICO, Chihuahua at about 7000 feet (*Wislizenus; Wright*). Hb. Kew.

5. **Pinus edulis,** Engelm. Bot. Wisliz. Exped. p. 4; DC. Prodr. xvi. 2, p. 398; Torr. in Sitgr. Rep. p. 173, t. 20; Torr. Bot. U.S. & Mex. Bound. Surv. p. 208.

Pinus fremontiana, Gord. in Journ. Hort. Soc. Lond. iv. p. 293, cum ic. xylogr. non Endl. ex Torr. loc. cit.

Texas; Colorado; New Mexico.—North Mexico, Sonora and Chihuahua (*Wright*). Hb. Kew.

6. **Pinus engelmanni,** Carr. Conif. p. 356; Engelm. Rev. Gen. Pinus, p. 21.

Pinus macrophylla, Engelm. in Wisliz. Mem. p. 103, non Lindl.

North Mexico, mountains of Cosiquiriachi (*Wislizenus*).

7. **Pinus filifolia,** Lindl. Bot. Reg. 1840, Misc. n. 132; DC. Prodr. xvi. 2, p. 400; Antoine, Conif. p. 47; Engelm. Rev. Gen. Pinus, p. 20.

Pinus skinneri, Forbes, et *P. jostii,* Roezl, ex Gord. Pinet. p. 223.

Guatemala, Volcan de Fuego (*Hartweg*). Hb. Kew.

8. **Pinus flexilis,** James in Long's Exped. ii. p. 27; DC. Prodr. xvi. 2, p. 403; Gord. Pinet. p. 224; Engelm. in Rothr. Bot. Ariz. p. 256.

British Colombia southward to Arizona and New Mexico.—North Mexico.

9. **Pinus greggii,** Engelm. ex Parlat. in DC. Prodr. xvi. 2, p. 396.

North Mexico, Saltillo (*Gregg*).

10. **Pinus hartwegii,** Lindl. Bot. Reg. 1839, p. 62. n. 95; DC. Prodr. xvi. 2, p. 399; Engelm. Rev. Gen. Pinus, p. 21 sub *P. montezuma.*

Pinus ehrenbergii et *P. rudis,* Endl. Synop. Conif. p. 151; Carr. Conif. p. 311.

Pinus montezumæ, Gord. Pinet. p. 232, non Lamb.

Pinus lowii, P. robusta, P. endlicheriana, P. longifolia, P. hartwegii, P. scoparia, P. iztacihuatli, P. resinosa, P. standishii, P. amecaensis, P. aculcensis, P. papeleui, P. atrovirens, P. corrugata, P. frondosa, P. geitneri, P. krelagi, P. suffruticosa et *P. tlamacaensis,* Roezl, Cat. Grain. Conif. Mex., ex Gord. Pinet. Suppl. pp. 71–86.

South Mexico, mountains of Campanario, 9000 feet (*Hartweg*), Real del Monte (*Ehrenberg*), Popocatepetl and Iztacihualt 13,000 to 14,000 feet (*Roezl*), Cofre de Perote (*Bourgeau*). Hb. Kew.

11. **Pinus lambertiana,** Dougl. in Trans. Linn. Soc. xv. p. 500; DC. Prodr. xvi. 2, p. 406; Antoine, Conif. p. 41, t. 19.

Columbia River to the confines of Mexico.

12. **Pinus lawsoni,** Roezl, ex Gord. Pinet. Suppl. p. 64.

Mexico, from the higher mountains.

13. **Pinus leiophylla,** Schiede et Deppe in Linnæa, vi. p. 354, et xii. p. 490; DC. Prodr. xvi. 2, p. 401; Seem. Bot. Voy. 'Herald,' p. 336; Engelm. Rev. Gen. Pinus, p. 20.

Pinus gracilis, P. comonfortii, P. huisquilucaensis, P. verrucosa, P. monteallegri, P. decandolleana, P. dependens et *P. cedrus,* Roezl, Cat. Grain. Conif. Mex., ex Gord. Pinet. Suppl. pp. 71–86.

North Mexico, Sierra Madre (*Seemann,* 1960, 1962), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer,* 845); South Mexico, Anganguio (*Hartweg,* 441), peak of Orizaba 7000 to 9000 feet (*Linden,* 2), Oaxaca at 5000 feet (*Galeotti*), forests of the Desierto Viejo and San Nicolas (*Bourgeau,* 905, 1016), Pedregal and Cañada de Tizapan (*Christy*), Chinautla, Puebla (*Liebmann*). Hb. Kew.

14. **Pinus montezumæ,** Lamb. Pin. ed. 1, iii. p. 149, t. 64, et ed. 2, i. p. 23, t. 22; DC. Prodr. xvi. 2, p. 398; Carr. Conif. p. 317.; Engelm. Rev. Gen. Pinus, p. 20.

Pinus occidentalis, H. B. K. Nov. Gen. et Sp. ii. p. 4, et Cham. et Schl. in Linnæa, v. p. 76, non Swartz.

Pinus devoniana, Lindl. Bot. Reg. 1839, Misc. p. 62, n. 96; Endl. Synop. Conif. p. 153; Gord. Pinet. p. 221.

Pinus russelliana, Lindl. Bot. Reg. 1839, Misc. p. 63. n. 97; Antoine, Conif. p. 49; Carr. Conif. p. 314.

Pinus pseudostrobus, Gord. Pinet. p. 237, non Lindl.

Pinus tenangensis, P. soulangeana, P. troubezkoiana, P. grandis, P. elegans, P. boothiana, P. spinosa, P. rumeliana, P. boucheana, P. van geertii, P. northumberlandiana, P. sanrafaeliana, P. keteleerii, P. dolleriana, P. van houttei, P. paxtoni, P. thibaudiana, P. haageana, P. hendersonii, P. valida, P. monstrosa, P. nesselrodiana, P. coarctata, P. bullata, P. thelemanni, P. horizontalis, P. rubescens, P. ortgiesiana, P. rinzii, P. angulata, P. aztecaensis, P. zacatlanæ, P. michoacaensis, P. magnifica, P. ocampii, P. zitacuaria, P. verschaffeltii, P. nitida, P. tomacocaensis, P. pawlikowskiana, P. ocote, P. leroyi et *P. cornea,* Roezl, Cat. Conif. Mex., ex Gord. Pinet. Suppl. pp. 71–86, et Parlat. in DC. Prodr. xvi. 2, p. 399.

North Mexico, mountains near Chihuahua (*Potts*), Cerro de Pinal (*Seemann*, 1454); South Mexico, peak of Orizaba at 10,000 to 12,000 feet (*Linden*, 4; *Galeotti*, 3), Chinantla, Puebla (*Liebmann*), very frequent in equinoctial Mexico, between 3500 and 12,000 feet (*Humboldt & Bonpland*), mountains of Popocatepetl and Morelia and near Zitacuaro (*Roezl*), Desierto Viejo (*Bourgeau*), near Real del Monte &c. (*Ehrenberg*). Hb. Kew.

β. **macrophylla,** Parlat. in DC. Prodr. xvi. 2, p. 399; Lindl. Bot. Reg. 1839, Misc. p. 63. n. 98 (species).

Pinus wincesteriana, Gord. in Journ. Hort. Soc. Lond. ii. p. 158, cum ic. xylogr., et *P. grenvilleæ,* Gord. loc. cit. p. 77, cum ic. xylogr.

Pinus gordoniana, Hartw. in Journ. Hort. Soc. Lond. ii. p. 7, cum ic. xylogr.

Pinus backhousiana, P. retracta et *P. neplusultra,* Roezl, Cat. Conif. Mex., ex Gord. Pinet. Suppl. pp. 71–86, et Parlat. in DC. Prodr. xvi. 2, p. 399.

South Mexico, Cerro de San Juan, near Tepic (*Hartweg*), on the "Ocotillo" (*Hartweg*).

γ. **lindleyana,** Parlat. in DC. Prodr. xvi. 2, p. 399; Gord. in Journ. Hort. Soc. Lond. v. p. 215, et Pinet. p. 229 (species).

Pinus richardiana, P. planchoni, P. inflexa, P. wilsoni et *P. decaisneana,* Roezl, Cat. Conif. Mex. ex Gord. Pinet. Suppl. pp. 71–86, et Parlat. in DC. Prodr. xvi. 2, p. 399.

South Mexico, near Sumate (sec. *Gordon*), Pachuca (*Roezl*), without locality (*Ehrenberg*), Ajusca at 10,000 to 11,000 feet (*Hartweg*).

15. **Pinus oocarpa,** Schiede in Linnæa, xii. p. 491; DC. Prodr. xvi. 2, p. 401; Antoine, Conif. p. 38, t. 17. fig. 2; Engelm. Rev. Gen. Pinus, p. 25.

South Mexico, common between Ario and Volcan de Jorullo (*Schiede*), Yavezia, Oaxaca, and Chinantla, Puebla at 7000 to 8000 feet (*Liebmann*). Hb. Kew.

16. **Pinus patula,** Schiede et Deppe in Linnæa, xii. p. 488 ; DC. Prodr. xvi. 2, p. 397 ; Antoine, Conif. p. 35, t. 16. fig. 2 ; Benth. Pl. Hartw. p. 58 ; Engelm. Rev. Gen. Pinus, p. 23.

Pinus subpatula, Roezl, Cat. Grain. Conif. Mex., ex Gord. Pinet. Suppl. p. 84.

North Mexico, Sierra Madre (*Seemann*, 1961) ; South Mexico, Malpays de la Joya and Las Cruces, between Lerma and Toluca (*Schiede & Deppe*), near Real del Monte (*Hartweg*), peak of Orizaba at 10,000 feet (*Galeotti*), Cumbre de Talea, Oaxaca 4000 to 5000 feet (*Liebmann*), Orizaba at 12,000 feet (*Heller*). Hb. Kew.

17. **Pinus pinceana,** Gord. Pinet. ed. 2, p. 280.

South Mexico, Hacienda del Potrero in the Barranca de Mestitlan (*Ghiesbreght*, 34), Cuernavaca 8000 to 9000 feet (*Ehrenberg*).

This is not taken up by Parlatore.

18. **Pinus ponderosa,** Dougl. in Lond. Arbor. p. 2243. figg. 2132, 2137 ; DC. Prodr. xvi. 2, p. 395 ; Forbes, Pinet. Woburn. t. 15 ; Antoine, Conif. p. 28, t. 8. fig. 3.

Pinus engelmannii, Torr. Bot. Whipple's Rep. p. 141.

Oregon and California to Colorado, New Mexico, and Arizona.—North Mexico ?

19. **Pinus pseudostrobus,** Lindl. Bot. Reg. 1839, Misc. p. 63. n. 98 ; DC. Prodr. xvi. 2, p. 401.

Pinus orizabæ, Gord. in Journ. Hort. Soc. Lond. i. p. 237, cum ic. xylogr.

Pinus hoseriana, P. tzompoliana, P. escandoniana, P. prasina, P. protuberans, P. heteromorpha et *P. regeliana,* Roezl, Cat. Grain. Conif. Mex., ex Parlat. in DC. Prodr. xvi. 2, p. 402.

South Mexico, region of Orizaba (*Bourgeau*, 2815 ; *Hartweg*). Hb. Kew.

20. **Pinus tenuifolia,** Benth. Pl. Hartw. p. 92 ; DC. Prodr. xvi. 2, p. 400 ; Gord. Pinet. p. 240 ; Endl. Conif. p. 155.

Guatemala, Chinautla, near Guatemala, and at the summit of the Chuacas range, near Salama (*Hartweg*). Hb. Kew.

21. **Pinus teocote,** Cham. et Schl. in Linnæa, v. p. 76, et xii. p. 487 ; DC. Prodr. xvi. 2, p. 396 ; Antoine, Conif. p. 35, t. 16. fig. 3.

Pinus vilmorinii, P. besseriana, P. microcarpa, P. mülleriana, P. hugelii, P. galocote et *P. interposita,* Roezl, Cat. Grain. Conif. Mex., ex Gord. Pinet. Suppl. pp. 71–86, et Parlat. in DC. Prodr. xvi. 2, p. 396.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 844); South Mexico, Real del Monte (*Ehrenberg*), Cerro de San Felipe, near Oaxaca, and Chinantla, Puebla (*Liebmann*), region of Orizaba (*Schiede & Deppe*). Hb. Kew.

6. PSEUDOTSUGA.

Pseudotsuga, Carr. Conif. ed. 2, p. 254, et Rev. Hort. 1868, p. 152, cum ic. col. ; Benth. et Hook. Gen. Plant. iii. p. 441.

A monotypic genus.

1. **Pseudotsuga douglasii,** Carr. Conif. ed. 2, p. 256.

Pinus douglasii, Sab. ex Parlat. in DC. Prodr. xvi. 2, p. 430; Hook. Fl. Bor.-Am. ii. p. 162, t. 183.
Abies douglasii, Lindl. in Penny Cyclop. i. p. 32; Forbes, Pinet. Woburn. t. 45; Benth. Pl. Hartw. p. 57.
Tsuga douglasii, Carr. Conif. ed. 1, p. 192.
Tsuga lindleyana, Roezl, Cat. Grain. Conif. Mex. p. 8.
Pseudotsuga lindleyana, Carr. Rev. Hort. 1868, p. 152, cum ic. col.

Oregon to New Mexico.—Mexico, near Moran (*Hartweg*, 439), Real del Monte (*Ehrenberg*). Hb. Kew.

7. ABIES.

Abies, Juss. Gen. Plant. p. 414, pro parte; Benth. et Hook. Gen. Plant. iii. p. 441.

About eighteen species widely dispersed in the northern hemisphere, chiefly in extratropical mountainous regions.

1. **Abies religiosa,** Cham. et Schl. in Linnæa, v. p. 77.

Pinus religiosa, H. B. K., et *P. hirtella,* H. B. K. Nov. Gen. et Sp. ii. p. 5; Antoine, Conif. p. 75, t. 28. fig. 2; Seem. Bot. Voy. 'Herald,' p. 335.
Abies hirtella, Lindl. in Penny Cyclop.; Carr. Conif. p. 203.
Picea hirtella, Loud., et *P. religiosa,* Loud. Arbor. Brit. iv. p. 2349.
Abies glaucescens et *A. tlapalcatudo,* Roezl, Cat. Grain. Conif. Mex. 1858–59, ex Parlat. in DC. Prodr. xvi. 2, p. 420.
Picea glaucescens, Gord. Pinet. p. 149.

North Mexico, Sierra Madre (*Seemann*, 1963), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 847); South Mexico, forest of the Desierto Viejo (*Bourgeau*, 1143), peak of Orizaba at 9000 to 10,500 feet (*Linden*, 3), Campanario (*Hartweg*), Real del Monte (*Christy*), between Mazatlan and Chilpancingo at about 4000 feet, and near El Guarda, between Guchilaca and the city of Mexico at about 8400 feet (*Humboldt & Bonpland*).

Order CXXXVII. CYCADACEÆ.

(By W. T. THISELTON DYER, F.R.S.)

Cycadaceæ, Benth. et Hook. Gen. Plant. iii. p. 443.

Nine genera are referred to this Order, and the number of species is estimated at about seventy-five. They are concentrated in the tropics of both worlds, and in temperate South Africa and Australia. There is an outlying endemic species in the Southern United States, and another in the Japanese and contiguous islands. None of the three New-World genera are represented in the other hemisphere.

In Skand. Naturf. Forhandl. iv. 1844, pp. 204 et 214, the title merely is given of a paper by F. Liebmann, "Abbildninger af 4 nye Mexicanske Cycadeer." Of this paper I have not found any other trace. But by the kindness of Prof. Lange of Copenhagen, I have been allowed to examine Liebmann's specimens and the elaborate drawings

which he had prepared from them. The four species (which he discovered in 1841) were *Dioon edule* (two forms), *Ceratozamia mexicana*, and *Zamia leiboldii*.

1. DIOON.

Dioon, Lindl. Bot. Reg. 1843, Misc. p. 59 (*Dion*).
Platyzamia, Zucc. in Abhandl. bayer. Akad. iv. p. 23, t. 4.

Two species peculiar to Mexico.

1. **Dioon edule**, Lindl. Bot. Reg. 1843, Misc. p. 59. (Tab. LXXXI. figg. 1, 2.)

Dioon edule, Miq. in Act. Inst. reg. Sc. Neerl. ser. 3, iv. p. 2, tt. 3 et 4. figg. *a, b, c*; Lem. in Ill. Hort. ii. p. 91, cum tt.; DC. Prodr. xvi. 2, p. 537.
Dioon imbricatum, Miq. in Wiss. Tijdschr. i. p. 36; Act. Inst. reg. Sc. Neerl. ser. 3, iv. t. 4. figg. *d, e*.
Dioon angustifolium, Miq. in Wiss. Tijdschr. i. p. 37; Act. Inst. reg. Sc. Neerl. ser. 3, iv. t. 4. fig. *f*.
Dioon aculeatum, Lem. in Ill. Hort. ii. Misc. p. 91.
Platyzamia rigida, Zucc. in Abhandl. bayer. Akad. iv. p. 23, t. 4.
Zamia mœleni, Miq. in Linn. xviii. p. 97.
Zamia friderici-guilielmi, Hort. Parmentier, ex Miq. Prodr. Syst. Cycad. p. 22.
Macrozamia pectinata, Liebm. ic. ined. in Herb. Haun.
Macrozamia littoralis, Liebm. ic. ined. in Herb. Haun.

South Mexico, Colipa and Laguna verde (*Liebmann*). Hort. et Herb. Kew.

The leaves vary very much in size and form in different individuals, and especially, as is usual in Cycads, with the age of the plants bearing them. The segments may be linear or broad, and distant or closely imbricated; in very young leaves they are often spinulose towards the apex.

The male plant has been well figured in Bot. Mag. t. 6184; Zuccarini's figure of the female cone is altogether inadequate, and that given in Plate LXXXI has therefore been prepared from a female cone produced at Kew.

EXPLANATION OF TAB. LXXXI. Figg. 1, 2.

Fig. 1, female cone, natural size; 2, detached scale.

β. **latipinna**, Dyer. (Tab. LXXXI. figg. 3–5.)

Segmenta $\frac{5}{8}$ pollice lata, inferiora apicem versus spinulosa.

South Mexico? Hort. Kew.

EXPLANATION OF TAB. LXXXI. Figg. 3–5.

Fig. 3, basal portion of rachis of leaf, showing dentate reduced segments; 4, segment from lower part of leaf, with spinulose apex; 5, segments from middle of leaf: all natural size.

[*Dioon strobilosum* (Lem. in Ill. Hort. 10, Misc. p. 4; *D. strobilaceum*, DC. Prodr. vi. 2, p. 537) is unknown to me. It may possibly be a state of *D. edule*.]

2. **Dioon spinulosum**, Dyer; Eichler in Gart. Zeit. 1883, p. 411. (Tab. LXXXII.)

Folia breviter petiolata, elongato-lanceolata, rigida, plana, pinnatisecta, ad 3 pedes longa; segmentis circiter 70 utroque latere, mediis majoribus suboppositis lineari-lanceolatis breviter acuminatis 18–23-nerviis, ad 4 pollices longis media latitudine semipollicaribus, basi angustiore, utroque

latère spinulis pungentibus basim versus integerrimis, inferioribus in dentes palmatifidos desinentibus. *Strobili*.....

South Mexico, Tuxtla; Yucatan, Progreso (*C. J. Höge*). Herb. Kew.

EXPLANATION OF TAB. LXXXII.

The figures represent the upper and lower portions of a leaf of the Yucatan specimen of the natural size.

2. CERATOZAMIA.

Ceratozamia, Brongn. in Ann. Sc. Nat. série 3, v. (1846), p. 7, t. 1; Benth. et Hook. Gen. Pl. iii. p. 446.
Dipsacozamia, Lehm. (*sic*) in Lindl. Veg. Kingd. p. 225 (nomen tantum).

About four species, restricted to Mexico.

1. **Ceratozamia miqueliana,** Wendl. Ind. Palm. p. 68; DC. Prodr. xvi. 2, p. 547. (Tab. LXXXIII.)

Ceratozamia ghiesbreghtii, Hort. Linden. ex Regel, Cycad. Gen. et Sp. Rev. p. 27.

Mexico. Hort. Kew.

As Miquel points out (Prodr. Syst. Cycad. p. 22), this species differs from all the rest, "quod foliola pedetentim proferat." Notwithstanding this, the male and female cones, which have not hitherto been described, fully accord with those characteristics of the genus. For material for the figure of the former I am indebted to Mr. W. Bull, F.L.S., of the King's Road, Chelsea; for that of the latter to Prof. Eichler, Director of the Royal Botanic Garden, Berlin.

EXPLANATION OF TAB. LXXXIII.

Fig. 1, male plant (reduced); 2, upper portion of leaf; 3, male cone; 4, 5, & 6, upper, lower, and lateral views of scale of male cone; 7, female cone: figs. 2–7 all natural size.

2. **Ceratozamia latifolia,** Miq. in Wiss. Tijdschr. i. p. 206; DC. Prodr. xvi. 2, p. 547.

Ceratozamia karsteniana, Hort. Kew.

Mexico, Mirador (*Liebmann*). Hort. Kew.

3. **Ceratozamia mexicana,** Brongn. in Ann. Sc. Nat. série 3, v. p. 7, t. 1; DC. Prodr. xvi. 2, p. 546.

Ceratozamia brevifrons, Miq. in Wiss. Tijdschr. i. p. 41 (a young state).
Zamia atropurpurea, Parment. ex Miq. Prodr. Syst. Cycad. p. 23.
Dipsacozamia mexicana, Liebm. ic. ined. in Herb. Haun.

Mexico (*Ghiesbreght*), Mirador (*Liebmann*).

I am quite unable to discriminate between this and a number of other forms which have been regarded as species by Miquel and others. The character of the foliage of all Cycads, as already remarked under *Dioon*, more or less alters with the age of the plant that bears it. For this reason the type plants which are preserved in botanic gardens constantly outgrow the diagnoses originally based upon them. This variableness with age makes the separation of nearly allied forms an all but hopeless task. The following varieties may be maintained for convenience:—

Ceratozamia mexicana, β. longifolia.

Ceratozamia longifolia, Miq. in Wiss. Tijdschr. i. p. 40; DC. Prodr. xvi. 2, p. 547.
Ceratozamia intermedia, Miq. in Wiss. Tijdschr. i. p. 40; *C. latifolia β. minor,* DC. Prodr. xvi. 2, p. 547.
Ceratozamia fusca-viridis, D. Moore in Proc. R. Dubl. Soc. 1878.
? *Zamia galeottii,* Vriese in Tijdschr. nat. Gesch. 1845, p. 23; Miq. in Wiss. Tijdschr. i. p. 40; DC. Prodr. xvi. 2, p. 545.
Zamia macrophylla, Parment. partim, ex Miq. Prodr. Syst. Cycad. p. 23.

MEXICO. Hort. Kew.

C. fusca-viridis seems only a form with dark-brown under surface to the leaflets.

γ. robusta.

Ceratozamia robusta, Miq. in Wiss. Tijdschr. i. p. 42; DC. Prodr. xvi. 2, p. 547.

MEXICO, Colipa (*Liebmann*).

δ. tenuis, Dyer.

Foliola pedalia, $\frac{5}{8}$ pollice lata, distantia.

MEXICO? Hort. Kew.

The leaflets somewhat resemble those of the following species, but the general habit is different.

4. **Ceratozamia küsteriana,** Regel in Bull. Soc. Nat. Mosc. 1857, p. 187, cum ic. xylogr., t. 3. fig. 6, t. 4. fig. 22, et Gartenfl. t. 878; DC. Prodr. xvi. 2, p. 546.

MEXICO (*Karwinsky*). Hort. Kew.

3. ZAMIA.

Zamia, Linn. Gen. n. 1227; Benth. et Hook. Gen. Pl. iii. p. 447.
Aulacophyllum, Regel, Gartenfl. 1876, p. 140.

About thirty species, concentrated in Tropical and Subtropical South America, with a few representatives in the West Indies.

1. **Zamia pseudo-parasitica,** Yates in Seem. Bot. Voy. 'Herald,' pp. 202, 253; DC. Prodr. xvi. 2, p. 543.
Zamia roezlii, Regel, in Linden's Cat. 1873, n. 90, et Gartenfl. 1874, p. 55; Ill. Hort. 1873, tt. 133, 134.
Aulacophyllum roezli, Regel, Gartenfl. 1876, p. 141.

PANAMA (*Warscewicz*).—COLOMBIA; PERU. Hort. et Hb. Kew.

2. **Zamia skinneri,** Warsc. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 146, cum ic.; Seem. Bot. Voy. 'Herald,' pp. 202, 252; Hook. in Bot. Mag. t. 5242; DC. Prodr. xvi. 2, p. 539.
Aulacophyllum skinneri, Regel, Gartenfl. 1876, p. 143.

GUATEMALA; PANAMA, Veraguas (*Warscewicz*). Hort. et Hb. Kew.

Seemann's specimens from Cape Corrientes (upon which the occurrence of the species

in Darien rests) are a different species, *Zamia obliqua*, and Cape Corrientes itself is in Colombia (Province of Cauca), not in Darien, as given by Seemann.

3. **Zamia chigua,** Seem. Bot. Voy. 'Herald,' p. 201, t. 43; DC. Prodr. xvi. 2, p. 539.

Zamia lindleyi, Warsc. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 146, cum ic.
Zamia lindleyana, Wendl. Ind. Palm. p. 53.
Zamia princeps, Hort. Bull.
Aulacophyllum ortgiesi, Regel, Gartenfl. 1876, p. 141.

Panama, Veraguas (*Warscewicz*).—Darien; New Granada. Hb. Kew.

4. **Zamia picta,** Dyer, n. sp.

Zamia picta, Hort.
Zamia muricata, β. picta, Miq. in Wiss. Tijdschr. i. p. 198; DC. Prodr. xvi. 2, p. 541.

? Mexico; ? Guatemala. Hort. et Hb. Kew.

It is remarkable that previous writers should have felt any hesitation in claiming for this splendid plant the specific rank which is undoubtedly due to it. Its affinities with *Zamia muricata* are really comparatively remote.

5. **Zamia acuminata,** Œrsted, MS. in Herb. Haun. ined.

Folia jugo-pinnata; petiolo sparsim aculeato, triquetro, glaberrimo; foliolis utroque latere ad 8, falcato-lanceolatis, apicem versus caudato-acuminatis, basi maxime angustatis, utrinque integerrimis, membranaceis, 30-nerviis, 10–11-pollicibus longis, $1\frac{1}{2}$–$1\frac{3}{4}$ pollicibus latis.

Nicaragua, "ad flumen S. Juan" (*Œrsted*). Herb. Haun.

6. **? Zamia fischeri,** Miq. in Hort. Houtt. p. 20; Linnæa, xix. p. 428, t. 7. fig. *d*; DC. Prodr. xvi. 2, p. 542; Dyer in Gard. Chron. 1883, p. 212, cum ic. xylogr.

? Mexico. Hort. Kew.

7. **Zamia latifolia,** Lodd. Cat. n. 687, ex DC. Prodr. xvi. 2, p. 541.

Zamia muricata, var. *obtusifolia,* Miq. in Tijdschr. nat. Gesch. x. p. 21; Miq. in Linnæa, xix. p. 425, t. 7, fig. *a*.
? *Zamia prasina,* Hort. Bull.
Encephalartos latifolius, Steud. Nomencl.

? Mexico; Honduras.—? St. Domingo. Hort. Kew.

8. **Zamia furfuracea,** Linn. f. in Ait. Hort. Kew. ed. 1, iii. p. 477; DC. Prodr. xvi. 2, p. 540; Bot. Mag. tab. 1969; Regel, Gartenfl. t. 932.

Mexico, Vera Cruz. Hort. et Hb. Kew.

9. **? Zamia ottonis,** Miq. in Linnæa, xvii. p. 740; DC. Prodr. xvi. 2, p. 544; Reg. Cycad. gen. et sp. Rev. p. 40.

Guatemala (*Roezl*, fide *Regel*).—Cuba.

A dubious species; perhaps a depauperate form of *Zamia latifolia*.

10. **Zamia loddigesii,** Miq. in Tijdschr. nat. Gesch. x. p. 73; Linnæa, xix. p. 425, t. 7. fig. *b*, *c*; DC. Prodr. xvi. 2, p. 541; Regel, Gartenfl. 1857, p. 14, t. 186. f. 26, t. 926. figg. *a*–*d*.

Zamia serrulata et *Zamia caracasana*, Lodd. Cat. ex Miq. in Linnæa, xix. p. 425.
Zamia mexicana, Miq. Prodr. Cycad. pp. 13, 25 ; DC. Prodr. xvi. 2, p. 543, et *Zamia terrestris*, Hort.

MEXICO.—? CARACAS. Hort. Kew.

11. **Zamia leiboldii**, Miq. in Linn. xix. p. 427.

Zamia leiboldi, v. γ. *angustifolia*, Regel, Gartenfl. p. 6, t. 929.
Zamia loddigesii, β. *leiboldii*, DC. Prodr. xvi. 2, p. 541.
Zamia cylindrica, Liebm. ic. ined. in Herb. Haun, et *Zamia eriolepis*, Hort.

SOUTH MEXICO, Colipa (*Liebmann*). Hb. Haun.

12. **Zamia spartea**, A. DC. Prodr. xvi. 2, p. 539.

MEXICO, Acayuca ; GUATEMALA, Vera Paz, Chimalapa (*ex A. De Candolle*).

13. **Zamia cycadifolia**, Dyer, n. sp.

Folia læte virentia, jugo-pinnata ; petiolo lævi vel sparsim aculeato, triquetro, glaberrimo ; foliolis utroque latere ad 8, chartaceis, linearibus, 5–8 pollicibus longis, $\frac{1}{4}$–$\frac{1}{2}$ pollice latis, apicem versus sensim attenuatis, basi angustatis, utrinque integerrimis, apice interdum obsolete denticulatis, obtusiusculis, supra nitidis, 18-nerviis.—*Zamia cycadifolia*, Hort. Par.

MEXICO (*Bourgeau*). Hb. Haun.

Possibly only a more robust form of *Zamia spartea*, from which it appears to differ in its broader, more numerously veined leaflets. It also approaches *Zamia tenuis*, which appears to be indigenous to the Bahamas.

14. ? **Zamia media**, Jacq. Hort. Schonbr. tt. 397, 398 ; DC. Prodr. xvi. 2, p. 542.

? MEXICO. I refer to this species with some doubt a plant collected by Liebmann at La Isleta and Maloapam.—ST. DOMINGO.

15. **Zamia lawsoniana**, Dyer, n. sp. (Tab. LXXXIV.)

Folia glabra, rhachi trigona supra foliola in mucronem tenuem producta, foliolis alternis utroque latere pluribus quam 25, longe lineari-lanceolatis, leviter curvulis, rigide coriaceis, ad 9 pollices longis, $\frac{1}{3}$ pollice latis, basi paullo abrupte angustatis articulatis, apicem versus sensim acuminatis, a medio spinuloso-serrulatis, marginibus siccitate recurvis, densinerviis. *Strobilus mas* longe pedunculatus, ovoideo-cylindricus, obtusissime acuminatus, ad $2\frac{1}{2}$ pollices longus, pollice diametro, squamis hexagonis, transverse latioribus, facie externa depressa, cinereo-tomentosis pedunculo strobilo quadruplo longiore, floccoso-tomentoso.

MEXICO, Oaxaca (209 *in Herb. Fielding*). Hb. Oxon.

EXPLANATION OF TAB. LXXXIV.

Fig. 1, upper portion of leaf ; 2, male cone ; 3 and 4, upper and lower view of antheriferous scale, both enlarged.

[*Lepidozamia peroffskyana*, Reg. in Bull. Soc. Nat. Mosc. 1857, pp. 182, 184, cum ic. xylogr., et t. 4. figg. 20, 21 (*Macrozamia perowskiana*, Miq.), is an Australian species, to which a Mexican origin can only have been attributed (DC. Prodr. xvi. 2, p. 547) by some error in labelling in the St.-Petersburg Botanic Garden.]

MONOCOTYLEDONES.

Series I. MICROSPERMÆ.

Order CXXXVIII. HYDROCHARIDEÆ.

Hydrocharideæ, Benth. et Hook. Gen. Plant. iii. p. 448.

Freshwater and marine aquatic herbs, inhabiting temperate and tropical regions. About forty species are known, belonging to fourteen genera. Several species not hitherto recorded probably exist within our limits, among them *Elodea canadensis*, Michx., which is widely dispersed in America and now common, though originally introduced in Europe, and the very widely dispersed *Vallisneria spiralis*, Linn. The marine genus *Thalassia* may also be represented on the coast.

1. LIMNOBIUM.

Limnobium, L. C. Rich. in Mém. Inst. Par. 1811, pp. 32 et 66, t. 8; Benth. et Hook. Gen. Plant. iii. p. 452.

An exclusively American genus of about four species, floating in fresh water, and ranging from Lake Ontario to Peru and Brazil.

1. **Limnobium stoloniferum,** Griseb. Fl. Brit. W. Ind. p. 506 ?

Jalambicea repens, Llav. et Lex. Nov. Veg. Descr. ii. p. 12 ?

South Mexico, valley of Mexico (*Schaffner*, 484). Hb. Kew.

Order CXXXIX. BURMANNIACEÆ.

Burmanniaceæ, Benth. et Hook. Gen. Plant. iii. p. 455.

Delicate annual or perennial herbs, often leafless and coloured; that is, not green. Ten genera, comprising between fifty and sixty species, which are dispersed over the warmer regions, and extend to China and North America. Judging from the distribution of the genus *Burmannia*, it is probable that other species remain to be discovered in Central America. Thus *Burmannia capitata*, Mart. and *B. biflora*, Mart. range from Carolina to Florida, and through the West Indies (from Cuba to Trinidad) to Brazil.

1. APTERIA.

Apteria, Nutt. in Journ. Acad. Sc. Philad. vii. p. 64, t. 9; Benth. et Hook. Gen. Plant. iii. p. 458.

Three forms have been published as species, but they seem to be varieties of one.

1. **Apteria setacea,** Nutt. in Journ. Acad. Sc. Philad. vii. p. 64, t. 9; Hook. Ic. Pl. t. 660; Griseb. Fl. Brit. W. Ind. p. 606.

Apteria lilacina, Miers in Trans. Linn. Soc. xviii. t. 38.

Apteria hymenanthera, Miq. Stirp. Surin. p. 216, t. 65.

Florida.—Mexico, Chinantla (*Hartweg*), eastern Cordillera of Oaxaca 3000 feet (*Galeotti*, 7179).—West Indies to Brazil. Hb. Kew.

Order CXL. ORCHIDEÆ.

Orchideæ, Benth. et Hook. Gen. Plant. iii. p. 460.

Bentham and Hooker define 334 genera, and estimate the number of species at between 4000 and 5000. They are spread all over the world where phanerogamic vegetation exists, though they are comparatively rare in the polar and high alpine regions, as well as in dry regions. The greatest concentration of species is in the tropics; and they are especially numerous in the mountains of Central America and the north-west part of South America. Taking them tribe by tribe, the Epidendreæ and Vandeæ mostly inhabit the tropics; the Ophrydeæ, for the greater part, extra-tropical countries, both north and south; and the Neottieæ and Cypripedieæ are generally dispersed. Some interesting particulars of the distribution of Mexican Orchids by A. Richard and H. Galeotti will be found in the 'Comptes Rendus des Séances de l'Académie des Sciences' for 1844. The illustrated Monograph of Mexican Orchids referred to therein, and also in the 'Annales des Sciences Naturelles,' série 3, iii. pp. 1–33, was never published.

Tribe I. EPIDENDREÆ.

Epidendreæ, Benth. et Hook. Gen. Plant. iii. p. 462 et 464.

1. PLEUROTHALLIS.

Pleurothallis, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 211; Benth. et Hook. Gen. Plant. iii. p. 488.

An exclusively American genus, of which nearly 375 species have been described. They range from Mexico and the West Indies to Bolivia and Brazil, and mostly inhabit mountainous regions.

1. **Pleurothallis amœna,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16; Lindl. Fol. Orch. n. 134.

South Mexico.

2. **Pleurothallis angustifolia,** Lindl. Bot. Reg. sub t. 1797; Fol. Orch. n. 89.

South Mexico, near Jalapa (*Schiede*), without locality (*Galeotti*). Hb. Kew.

3. **Pleurothallis bilamellata,** Rchb. f. in Linnæa, xxii. p. 830; Refug. Bot. ii. t. 95; Lindl. Fol. Orch. n. 58.

Pleurothallis obscura, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17.

South Mexico, Mirador (*Liebmann*).

4. **Pleurothallis breviflora,** Lindl. Bot. Reg. 1841, Misc. p. 59; Fol. Orch. n. 99.

Mexico. Introduced and cultivated by Messrs. Loddiges. Hb. Kew.

5. **Pleurothallis cardiothallis,** Rchb. f. in Bot. Zeit. 1857, p. 158; Lindl. Fol. Orch. n. 52.

Nicaragua (*Wright*). Hb. Kew.

6. **Pleurothallis caulescens,** Lindl. in Hook. Journ. Bot. i. p. 9; Fol. Orch. n. 280.

South Mexico, Jalapa (*Harris*).—Peru. Hb. Kew.

The Mexican plant is very doubtfully referred to this species.

7. **Pleurothallis chrysantha,** Lindl. Fol. Orch. n. 68.

Pleurothallis aurea, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16.

Mexico. A sketch in Hb. Kew.

8. **Pleurothallis circumplexa,** Lindl. Bot. Reg. 1831, Misc. p. 24; Fol. Orch. n. 65.

Pleurothallis mesophylla, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 946), region of Orizaba (*Bourgeau*, 2472); Guatemala (*Skinner*). Hb. Kew.

9. **Pleurothallis cochlearis,** Rchb. f. in Bot. Zeit. 1852, p. 764; Lindl. Fol. Orch. n. 122.

Mexico. Hb. Kew.

10. **Pleurothallis conanthera,** Rchb. f. Xenia Orch. iii. p. 41, t. 217.

South Mexico, Cordova. Introduced and cultivated by Messrs. Haage and Schmidt of Erfurt.

11. **Pleurothallis corniculata,** Lindl. Bot. Reg. 1842, Misc. p. 83 (excl. syn.), et Fol. Orch. n. 265.

Pleurothallis nubigena, Lindl. in Ann. Nat. Hist. ser. 3, i. p. 326.

Pleurothallis alata, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17?

Dendrobium corniculatum, Sw. Fl. Ind. Occ. p. 1537.

Mexico (*Galeotti*)?—Cuba; Jamaica.

12. **Pleurothallis crenata,** Lindl. Gard. Chron. 1846, p. 107; Fol. Orch. n. 237.

Mexico. Imported and cultivated by Messrs. Loddiges.

13. **Pleurothallis disticha,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16; Lindl. Fol. Orch. n. 153.

MEXICO (*Galeotti*).

14. **Pleurothallis dubia,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16; Lindl. Fol. Orch. n. 247.

MEXICO (*Galeotti*).

15. **Pleurothallis endotrachys,** Rchb. f. in Linnæa, xli. p. 95; Xenia Orch. iii. p. 16.

COSTA RICA (*Endres*).

16. **Pleurothallis fuegi,** Rchb. f. Beitr. Orch. Centr.-Am. p. 97, t. 10.

GUATEMALA, Volcan de Fuego (*Wendland*).

17. **Pleurothallis fulgens,** Rchb. f. in Gard. Chron. n. s. iv. p. 516.

COSTA RICA (*Endres*). Hb. Kew.

18. **Pleurothallis incompta,** Rchb. f. in Bonplandia, 1854, p. 24, et Xenia Orch. ii. p. 113, t. 137; Lindl. Fol. Orch. n. 180.

GUATEMALA (ex *Reichenbach*).—VENEZUELA.

19. **Pleurothallis krameriana,** Rchb. f. in Hamb. Gart. Zeit. xxi. p. 294.

CENTRAL AMERICA.

20. **Pleurothallis lateritia,** Rchb. f. in Gard. Chron. 1872, p. 731.

COSTA RICA (*Endres*). Hb. Kew.

21. **Pleurothallis leucopyramis,** Rchb. f. in Linnæa, xli. p. 47, et Xenia Orch. iii. p. 14, t. 210.

COSTA RICA? Hb. Kew.

22. **Pleurothallis linearis,** Lindl. Fol. Orch. n. 72.

Specklinia linearis, Lindl. Gen. & Sp. Orch. Pl. p. 9.

Humboldtia purpurea, Ruiz et Pav. Syst. Veg. Fl. Peruv. et Chil. p. 235; Pers. Syn. ii. p. 524.

MEXICO.—PERU.

A doubtful plant, according to Lindley.

23. **Pleurothallis longissima,** Lindl. Fol. Orch. n. 182; Xenia Orch. ii. p. 114, t. 137; Refug. Bot. ii. t. 141.

Pleurothallis racemiflora, Lindl. in Hook. Exot. Fl. ii. t. 123; Lodd. Bot. Cab. t. 949, nec Swartz.

SOUTH MEXICO, Oaxaca (*Karwinski*); GUATEMALA, Dueñas at 5000 feet (*Godman & Salvin*, 275); COSTA RICA, Cartago (*Œrsted*), San José (*Carmiol*).—JAMAICA. Hb. Kew.

24. **Pleurothallis luctuosa,** Rchb. f. in Linnæa, xli. p. 48; Xenia Orch. iii. p. 15, t. 210.

COSTA RICA (*Endres*). Hb. Kew.

25. **Pleurothallis marginata,** Lindl. Bot. Reg. 1838, Misc. n. 70, et Fol. Orch. n. 225.

GUATEMALA, without locality (*Skinner*), between Volcan de Fuego and Volcan de Agua (*Wendland*). Hb. Kew.

26. **Pleurothallis microphylla,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17; Lindl. Fol. Orch. n. 261.

MEXICO (*Galeotti*).

27. **Pleurothallis minutalis,** Lindl. Fol. Orch. n. 250.

Pleurothallis crassifolia, Rchb. f. in Linnæa, xxii. p. 832, et Xenia Orch. i. p. 174, t. 60, non Focke.

MEXICO (*Ehrenberg*).

28. **Pleurothallis moschata,** Rchb. f. Xenia Orch. iii. p. 42, t. 217.

COSTA RICA (*Endres*).

29. **Pleurothallis naraniensis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 96.

COSTA RICA, Naranjo (*Wendland*).

30. **Pleurothallis nicaraguensis,** Rchb. f. in Walp. Ann. vi. p. 171.

Physosiphon nicaraguensis, Liebm. Ind. Sem. Hort. Acad. Havn. 1853; Ann. Sc. Nat. série 4, i. p. 329.

NICARAGUA (*Œrsted*). Hb. Kew.

31. **Pleurothallis octomerioides,** Lindl. in Hook. Comp. Bot. Mag. ii. p. 354, et Fol. Orch. n. 101.

Pleurothallis congesta, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17.

MEXICO (*Henchman*). Hb. Kew.

32. **Pleurothallis pachyglossa,** Lindl. Bot. Reg. 1840, Misc. 146, et Fol. Orch. n. 189.

MEXICO (*Barker*). Hb. Kew.

33. **Pleurothallis pantasmi,** Rchb. f. in Bonplandia, 1855, p. 224; Lindl. Fol. Orch. n. 69.

NICARAGUA, mountains of Pantasmo and Segovia at 4000 feet (*Œrsted*); COSTA RICA, between Cartago and Naranjo (*Wendland*). Hb. Kew.

34. **Pleurothallis perpusilla,** Rchb. f. in Seem. Bot. Voy. 'Herald,' p. 215, et Xenia Orch. i. p. 173, t. 60; Lindl. Fol. Orch. n. 216.

PANAMA, Boquete, Veraguas (*Seemann*). Hb. Kew.

35. **Pleurothallis phyllocardia,** Rchb. f. Beitr. Orch. Centr.-Am. p. 97.

COSTA RICA, Desengaño (*Wendland*).

36. **Pleurothallis plumosa,** Lindl. Bot. Reg. 1842, Misc. p. 72; Fol. Orch. n. 157.

Pleurothallis minax, Rchb. f. in Bonplandia, 1854.

Costa Rica, Naranjo (*Wendland*).—Venezuela; Trinidad. Hb. Kew.

37. **Pleurothallis polyliria,** Endres et Rchb. f. in Gard. Chron. 1871, p. 1483.

Costa Rica (*Endres*). Hb. Kew.

38. **Pleurothallis polystachya,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16; Lindl. Fol. Orch. p. 44.

Mexico (*Galeotti*).

39. **Pleurothallis pubescens,** Lindl. in Hook. Comp. Bot. Mag. ii. p. 355; Fol. Orch. n. 136.

Mexico (*Barker*).

40. **Pleurothallis pyrsodes,** Rchb. f. in Gard. Chron. n. s. vi. p. 386.

Central America?

41. **Pleurothallis quadrifida,** Lindl. Bot. Reg. 1842, Misc.; Fol. Orch. n. 186.

Dendrobium quadrifidum, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 40.

Pleurothallis ghiesbreghtiana, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16.

South Mexico, around Jesus del Monte, near Valladolid (*La Llave*).

42. **Pleurothallis retusa,** Lindl. Bot. Reg. 1842, Misc.; Fol. Orch. p. 44.

Dendrobium retusum, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 40.

South Mexico, mountains of Vallisoleto (*La Llave*).

43. **Pleurothallis rufobrunnea,** Lindl. Fol. Orch. n. 217.

South Mexico, on rocks near Oaxaca, at 6500 feet (*Galeotti*, 5036). Hb. Kew.

44. **Pleurothallis ruscifolia,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 211; Hook. Exot. Fl. iii. t. 197; Lindl. Fol. Orch. n. 83.

Pleurothallis succosa, Lindl. Gen. & Sp. Orch. Pl. p. 5.

Pleurothallis multicaulis, Pœpp. et Endl. Nov. Gen. et Sp. i. t. 82.

Epidendrum ruscifolium, Jacq. Sel. Stirp. Amer. p. 226, t. 133. fig. 3.

Dendrobium ruscifolium, Sw. N. Act. Ups. vi. p. 84.

Costa Rica, Desengaño (*Wendland*).—Common in the West Indies and the northern part of South America. Hb. Kew.

45. **Pleurothallis scariosa,** Lindl. Bot. Reg. 1842, Misc.; Fol. Orch. n. 228.

Dendrobium scariosum, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 39.

Mexico, near Arumbaro (*La Llave*).

46. **Pleurothallis schiedei,** Rchb. f. in Linnæa, xxii. p. 826; Lindl. Fol. Orch. n. 159.

South Mexico (*Schiede*).

47. **Pleurothallis segoviensis,** Rchb. f. in Bonplandia, 1855, p. 223; Lindl. Fol. Orch. n. 227.

NICARAGUA, Segovia (*Ærsted*). Hb. Kew.

48. **Pleurothallis stenostachya,** Rchb. f. in Linnæa, xviii. p. 399; Lindl. Fol. Orch. n. 148.

SOUTH MEXICO, without locality (*Leibold*), Mirador (*Liebmann*), Cordillera of Vera Cruz, at 3000 to 4000 feet (*Galeotti*, 5168). Hb. Kew.

49. **Pleurothallis strupifolia,** Lindl. Bot. Reg. 1839, Misc. p. 2; Fol. Orch. n. 137.

Pleurothallis picta, Hook. Bot. Mag. t. 3897, non Lindl.
Pleurothallis bicolor, Lindl. Bot. Reg. 1842, Misc.

MEXICO? BRAZIL? Cultivated specimens in Kew herbarium.

50. **Pleurothallis tenuissima,** Rchb. f. in Linnæa, xviii. p. 399; Lindl. Fol. Orch. n. 270.

SOUTH MEXICO, without locality (*Leibold*), Mirador (*Sartorius*), Vera Cruz, at 3000 feet (*Galeotti*). Hb. Kew.

51. **Pleurothallis tribuloides,** Lindl. Gen. & Sp. Orch. Pl. p. 6; Fol. Orch. n. 243.

Pleurothallis spathulata, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17.
Pleurothallis fallax, Rchb. f. in Bonplandia, 1855, p. 224.
Dendrobium tribuloides, Sw. Fl. Ind. Occ. p. 1535.
Epidendrum tribuloides, Sw. Prodr. p. 123.

SOUTH MEXICO, without locality (*Leibold; Galeotti*); COSTA RICA, Volcan de Irazu (*Ærsted*).—CUBA, JAMAICA. Hb. Kew.

52. **Pleurothallis trichopoda,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17; Lindl. Fol. Orch. n. 260.

MEXICO (*Galeotti*).

53. **Pleurothallis vilipensa,** Rchb. f. in Hamb. Gart. Zeit. xiii. p. 3; Lindl. Fol. Orch. n. 268.

CENTRAL AMERICA (*Warscewicz*).

54. **Pleurothallis villosa,** Knowles & Westc. Fl. Cab. ii. p. 78; Lindl. Fol. Orch. n. 150.

Pleurothallis lepanthiformis, Rchb. f. in Linnæa, xviii. p. 398.
Specklinia ciliaris, Lindl. Bot. Reg. 1838, Misc. p. 31.

MEXICO (*Schaffner*).—TRINIDAD; GUIANA. Hb. Kew.

55. **Pleurothallis violacea,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 16; Lindl. Fol. Orch. n. 246.

MEXICO (*Galeotti*).

56. **Pleurothallis vittata,** Lindl. Bot. Reg. 1838, Misc. p. 73; Fol. Orch. p. 97.

Pleurothallis wagneriana, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 274.

MEXICO. Imported and cultivated by Messrs. Loddiges; region of Orizaba (*Bourgeau,* 2469).—VENEZUELA. Hb. Kew.

2. STELIS.

Stelis, Sw. in K. Vetensk. Acad. Nya Handl. Stockh. xxi. p. 248, et Fl. Ind. Occ. iii. p. 1549; Benth. et Hook. Gen. Plant. iii. p. 490.

An exclusively American genus, of which about 170 species have been published. They range from Mexico and the West Indies to Peru and Brazil.

1. **Stelis ciliaris,** Lindl. in Hook. Comp. Bot. Mag. ii. p. 353; Fol. Orch. n. 102.

Stelis atropurpurea, Hook. Bot. Mag. t. 3975.

SOUTH MEXICO, Mirador, Vera Cruz (*Linden,* 213), without locality (*Leibold*). Hb. Kew.

2. **Stelis costaricensis,** Rchb. f. in Bonplandia, 1855, p. 224; Lindl. Fol. Orch. n. 67.

COSTA RICA, Cartago (*Ærsted*). Hb. Kew.

3. **Stelis endresii,** Rchb. f. in Gard. Chron. 1870, p. 1373.

COSTA RICA (*Endres*). Hb. Kew.

4. **Stelis glossula,** Rchb. f. in Gard. Chron. 1870, p. 1373.

COSTA RICA (*Endres*). Hb. Kew.

5. **Stelis lancilabris,** Rchb. f. Beitr. Orch. Centr.-Am. p. 94, t. 8.

COSTA RICA, Desengaño (*Wendland*).

6. **Stelis leucopogon,** Rchb. f. Beitr. Orch. Centr.-Am. p. 95, t. 9.

COSTA RICA, Desengaño (*Wendland*). Hb. Kew.

7. **Stelis liebmanni,** Rchb. f. (inedita?).

SOUTH MEXICO, Mirador (*Liebmann*). Hb. Kew.

8. **Stelis microstigma,** Rchb. f. Beitr. Orch. Centr. Am. p. 94, t. 8.

COSTA RICA, Desengaño (*Wendland*).

9. **Stelis microtis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 95, t. 8.

COSTA RICA, Desengaño (*Wendland*).

10. **Stelis obscurata,** Rchb. f. Beitr. Orch. Centr.-Amer. p. 95, t. 8.

COSTA RICA, Desengaño (*Wendland*).

11. **Stelis ophioglossoides,** Sw. Fl. Ind. Occ. p. 1551; Lindl. Fol. Orch. n. 42; Lodd. Bot. Cab. t. 442; Bot. Reg. t. 935 (male).

Epidendrum ophioglossoides, Jacq. Sel. Stirp. Amer. p. 225, t. 133. fig. 2.

South Mexico, Cordillera of Vera Cruz, 3000 to 4000 feet (*Galeotti*, 5155).—Throughout the West Indies to Guiana and Brazil. Hb. Kew.

12. **Stelis pardipes,** Rchb. f. Beitr. Orch. Centr.-Am. p. 96.

Costa Rica, Desengaño (*Wendland*).

13. **Stelis parvula,** Lindl. Fol. Orch. n. 49.

Nicaragua (*Wright*). Hb. Kew.

14. **Stelis purpurascens,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 18.

Mexico (*Galeotti; Müller*, 1112). Hb. Kew.

15. **Stelis thecoglossa,** Rchb. f. Beitr. Orch. Centr.-Am. p. 93.

Costa Rica, Desengaño (*Wendland*).

16. **Stelis,** sp.

South Mexico, Trinidad, valley of Cordova (*Bourgeau*, 1914). Hb. Kew.

3. PHYSOSIPHON.

Physosiphon, Lindl. Bot. Reg. sub t. 1797; Benth. et Hook. Gen. Plant. iii. p. 490.

About four species restricted to Tropical America, and ranging from Mexico to Brazil.

1. **Physosiphon carinatus,** Lindl. Bot. Reg. 1838, Misc. p. 72.

South Mexico, near Sosocola (*Schiede*), region of Orizaba (*Bourgeau*, 3371), Chiapas (*Linden*, 1234). Hb. Kew.

2. **Physosiphon loddigesii,** Lindl. Bot. Reg. sub t. 1797; Bot. Mag. t. 4869; Hook. Ic. Pl. t. 508.

Stelis tubata, Lodd. Bot. Cab. t. 1601.

South Mexico, Jalapa (*Coulter*, 1535; *Harris; Schiede*), Mirador (*Linden*, 24; *Sartorius*), Oaxaca, at 4000 feet (*Galeotti*, 5076, 5338). Hb. Kew.

3. **Physosiphon ochraceus,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17.

South Mexico, Oaxaca, 3000 to 4000 feet (*Galeotti*, 5339). Hb. Kew.

4. LEPANTHES.

Lepanthes, Sw. in K. Vetensk. Acad. Nya Handl. Stockh. xxi. p. 249, t. 8, et Fl. Ind. Occ. iii. p. 1555; Benth. et Hook. Gen. Plant. iii. p. 491.

Nearly 100 species have been published; all inhabit Tropical America, ranging from Mexico and the West Indies, to Peru and Brazil.

1. **Lepanthes avis,** Rchb. f. Xenia Orch. i. p. 144, t. 50.
South Mexico, summit of Cerro de Guadalupe, near Jalapa (*Kirchmar*).

2. **Lepanthes blepharistes,** Rchb. f. Beitr. Orch. Centr.-Am. p. 92.
Costa Rica, Desengaño (*Wendland*).

3. **Lepanthes elata,** Rchb. f. Beitr. Orch. Centr.-Am. p. 90.
Costa Rica, Desengaño (*Wendland*).

4. **Lepanthes erinacea,** Rchb. f. in Bonplandia, 1855, p. 225.
Costa Rica, Turrialba (*Œrsted*). Hb. Kew.

5. **Lepanthes horrida,** Rchb. f. Beitr. Orch. Centr.-Am. p. 91.
Costa Rica, Desengaño (*Wendland*).

6. **Lepanthes lindleyana,** Œrst. et Rchb. f. Xenia Orch. i. p. 149, t. 50.
Costa Rica, Cartago (*Œrsted; Wendland*). Hb. Kew.

7. **Lepanthes pristidis,** Rchb. f. in Linnæa, xxii. p. 820.
South Mexico, Jalapa (*Leibold*); Mirador (*Sartorius*).—Cuba. Hb. Kew.

8. **Lepanthes schiedei,** Rchb. f. in Linnæa, xxii. p. 820; Xenia Orch. i. p. 144, t. 50.
South Mexico, Jalapa (*Schiede*). Hb. Kew.

9. **Lepanthes tipulifera,** Rchb f. Beitr. Orch. Centr.-Am. p. 91, t. 10.
Costa Rica, Desengaño (*Wendland*).

10. **Lepanthes tridentata,** Sw. Fl. Ind. Occ. p. 1561; Lindl. Gen. Sp. Orch. Pl. p. 11; Rchb. f. Xenia Orch. i. p. 143.
Mexico (*Leibold*)?—Jamaica.

11. **Lepanthes turialvæ,** Rchb. f. in Bonplandia, 1855, p. 225; Xenia Orch. i. pp. 151 et 156, t. 50; Beitr. Orch. Centr.-Am. pp. 57 et 90, t. 10.
Costa Rica, Turrialba, 3000 feet (*Œrsted*). Hb. Kew.

12. **Lepanthes wendlandi,** Rchb. f. Beitr. Orch. Centr.-Am. p. 91, t. 9.
Costa Rica, Volcan de Barba (*Wendland*).

13. **Lepanthes,** sp.
Guatemala, Dueñas (*Godman & Salvin*, 23). Hb. Kew.

14. **Lepanthes,** sp.
Guatemala, Alotenango (*Godman & Salvin*). Hb. Kew.

15. **Lepanthes,** sp.
Guatemala, Barranca Honda, Volcan de Fuego (*Godman & Salvin*, 1). Hb. Kew.

16. **Lepanthes,** sp.
South Mexico, Mirador (*Linden*, 211), Cordillera of Vera Cruz at 3000 feet (*Galeotti*). Hb. Kew.

17. **Lepanthes,** sp.

South Mexico, Orizaba (*Botteri*, 912). Hb. Kew.

18. **Lepanthes,** sp.

South Mexico, Oaxaca at 6000 feet (*Galeotti*, 5312). Hb. Kew.

5. RESTREPIA.

Restrepia, H. B. K. Nov. Gen. et Sp. i. p. 366, t. 94; Benth. et Hook. Gen. Plant. iii. p. 491.

An exclusively Tropical-American genus, of about twenty published species, ranging from Mexico to Peru and Brazil.

1. **Restrepia dayana,** Rchb. f. in Gard. Chron. n. s. iv. p. 257.

Costa Rica, at 3000 feet (*Endres*). Hb. Kew.

2. **Restrepia muscifera,** Rchb. f. in Lindl. Fol. Orch. n. 7.

Pleurothallis muscifera, Lindl. Bot. Reg. 1842, Misc. p. 79.

Guatemala, without locality (*Skinner*), Alotenango (*Godman & Salvin*). Hb. Kew.

3. **Restrepia ophiocephala,** Rchb. f. in Bonplandia, 1854, p. 88.

Pleurothallis ophiocephala, Lindl. Bot. Reg. 1838, Misc. p. 34; Fol. Orch. ii. 94.

Pleurothallis puberula, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1854, p. 393.

South Mexico, valley of Cordova (*Bourgeau*, 1934); Guatemala, without locality (*Skinner*). Hb. Kew.

4. **Restrepia prorepens,** Rchb. f. in Gard. Chron. n. s. vii. p. 810; Xenia Orch. iii. p. 8, t. 206.

Costa Rica (*Endres*). Hb. Kew.

5. **Restrepia reichenbachiana,** Endres in Gard. Chron. n. s. iv. p. 356; Rchb. f. Xenia Orch. iii. p. 7, t. 206.

Costa Rica, at 4000 feet (*Endres*).

6. **Restrepia ujarensis,** Rchb. f. in Bonplandia, 1855, p. 225; Beitr. Orch. Centr.-Am. p. 57, t. 10.

Pleurothallis ujarensis, Lindl. Fol. Orch. ii. 104.

Costa Rica, Ujaras (*Ærsted*). Hb. Kew.

7. **Restrepia xanthophthalma,** Rchb. f. in Hamb. Gart. Zeit. xxi. p. 300.

Restrepia lansbergii, Hook. Bot. Mag. t. 5257, nec Rchb. f.

Guatemala, in a barranca near the city of Guatemala (*Wendland*). Hb. Kew.

6. MASDEVALLIA.

Masdevallia, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 122, t. 27; Syst. Veg. p. 238; Benth. et Hook. Gen. Plant. iii. p. 492.

An exclusively Tropical-American genus, of which upwards of 100 species have been

published, though some of them may be regarded as varieties rather than species. They range from Mexico to Bolivia and Brazil; but they are very rare on the eastern side of South America, and hitherto none has been found in the West Indies. *Masdevallia fenestrata*, Lindl., is the same as *Pleurothallis atropurpurea*, Lindl.

1. **Masdevallia attenuata,** Rchb. f. in Gard. Chron. 1871, p. 834; Bot. Mag. t. 6273.

Costa Rica, imported and cultivated by Messrs. Veitch. Hb. Kew.

2. **Masdevallia chontalensis,** Rchb. f. Otia Hamb. p. 17.

Nicaragua, Chontales (*Seemann*, 180). Hb. Kew.

3. **Masdevalllia cupularis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 93.

Costa Rica, Desengaño (*Wendland*).

4. **Masdevallia floribunda,** Lindl. Bot. Reg. 1843, Misc. p. 72; Rchb. f. in Gard. Chron. n. s. viii. p. 616.

Masdevallia galeottiana, A. Rich. in Ann. Sc. Nat. série 3, iii. p. 17.

Masdevallia myriostigma (*myriosigma*, errore), Morr. Belg. Hort. 1873, pp. 353 cum icone, 359 et 361.

Masdevallia floribunda, var. *myriostigma* (errore *myriosigma*), Morr. *l. c.* p. 380 (in indice).

South Mexico, Jalapa (*Leibold*; *Harris*), Cordillera of Vera Cruz, at 3000 to 4000 feet (*Galeotti*, 5075). Hb. Kew.

5. **Masdevallia gracilenta,** Rchb. f. in Gard. Chron. n. s. iv. p. 98.

Costa Rica (*Endres*).

6. **Masdevallia harryana,** Rchb. f. in Gard. Chron. 1871, p. 1421, et n. s. ii. p. 488; Flor. & Pomol. 1873, p. 169, cum icone colorata; Belg. Hort. 1873, t. 21; Fl. des Serres, t. 2250.

Masdevallia lindeni, var. *harryana*, André, Ill. Hort. 1872, t. 142.

Masdevallia lindeni, Hook. f. Bot. Mag. t. 5990.

Masdevallia harryana, Fl. Mag. t. 555?

Masdevallia lindeni, André, Ill. Hort. 1870, t. 42; Jenning's Orch. t. 17; Fl. Mag. n. s. t. 28?

Central America (*Roezl*).—Colombia. Hb. Kew.

Should the plants figured in the various publications cited above prove to be the same species—which is not unlikely, as no two are exactly alike, though the differences are not great—*lindeni* is the older published name; but then there is the still older *Masdevallia lindeniana*, A. Rich. et Gal., a name so near as to cause confusion.

7. **Masdevallia lata,** Rchb. f. in Gard. Chron. n. s. viii. p. 653.

Central America (*Zahn*).

8. **Masdevallia lindeniana,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 17.

Mexico (*Galeotti*). A sketch only in Kew herbarium.

9. **Masdevallia livingstoneana,** Roezl et Rchb. f. in Gard. Chron. n. s. ii. p. 322.

Panama (*Roezl*).

10. **Masdevallia reichenbachiana,** Endres in Gard. Chron. n. s. iv. p. 257.

Costa Rica (*Endres*).

11. **Masdevallia triaristella,** Rchb. f. in Gard. Chron. n. s. vi. p. 226; Bot. Mag. t. 6268.

Costa Rica.

12. **Masdevallia wageneriana,** Linden, Cat. 1855; Lindl. & Paxt. Fl. Gard. iii. p. 74, cum xylogr.; Bot. Mag. t. 4921; Rchb. f. Xenia Orch. i. p. 199, t. 75; Gard. Chron. n. s. xv. p. 720.

Central America (see Hooker in Bot. Mag.).—Venezuela.

7. ARPOPHYLLUM.

Arpophyllum, Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 19; Benth. et Hook. Gen. Plant. iii. p. 492.

A genus of about six species, inhabiting Mexico, Central America, Colombia, and Jamaica. The species are very much alike in appearance, and some of the specimens referred to below may be wrongly named.

1. **Arpophyllum alpinum,** Lindl. in Benth. Pl. Hartw. p. 93; Walp. Ann. vi. p. 448.

South Mexico, mountains of Totonicapan at 10,000 feet, also near Cliatepec, and on an inaccessible rock in the Cañada of Todos Santos (*Hartweg*). Hb. Kew.

2. **Arpophyllum giganteum,** Hartweg, ex Lindl. in Ann. Nat. Hist. iv. (1840), p. 384; Walp. Ann. vi. p. 448.

South Mexico, between Tolca and Tanetze (*Hartweg*), Sierra San Pedro Nolasco, &c. (*Jurgensen*, 863); Guatemala, without locality (*Skinner*), below Alotenango, Santa Rosa in Vera Paz (*Godman & Salvin*, 35). Hb. Kew.

3. **Arpophyllum medium,** Rchb. f. Beitr. Orch. Centr.-Am. p. 89.

Guatemala, Las Nubes (*Wendland*).

4. **Arpophyllum spicatum,** Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 20; Lindl. Gen. & Sp. Orch. Pl. p. 151; Bot. Mag. t. 6022?

South Mexico, near Arumbaro (*La Llave*), Hacienda del Carmen (*Hartweg*), Cordillera of Oaxaca, at 7000 to 8500 feet (*Galeotti*, 5027), Sierra San Pedro Nolasco, &c. (*Jurgensen*, 593). Hb. Kew.

Specimens from Jamaica in Kew herbarium referred to this species are different. We doubt the 'Botanical Magazine' figure representing this species, because the specimen drawn and preserved in their herbarium does not possess the relatively short curved

leaves so characteristic of this species, and which suggested the generic name. The species from Jamaica may be *A. giganteum*, Hartweg.

8. OCTOMERIA.

Octomeria, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 211; Benth. et Hook. Gen. Plant. iii. p. 493.

About ten species, inhabiting Tropical America, from the West Indies to Brazil.

1. **Octomeria**, sp.

NICARAGUA (*Tate*, 456). Hb. Kew.

9. MEIRACYLLIUM.

Meiracyllium, Rchb. f. Xenia Orch. i. p. 12; Benth. et Hook. Gen. Plant. iii. p. 493.

The following are all the published species.

1. **Meiracyllium gemma,** Rchb. f. in Gard. Chron. 1869, p. 988; Xenia Orch. iii. p. 13, t. 209.

NORTH MEXICO, Sierra Madre (*Roezl*). Cultivated specimens only in Kew herbarium.

2. **Meiracyllium trinasutum,** Rchb. f. Xenia Orch. i. p. 12, t. 6; Walp. Ann. vi. p. 859; Beitr. Orch. Centr.-Am. p. 73.

GUATEMALA, without locality (*Wendland*), Mazatenango (*Bernoulli*, 372). Hb. Kew.

3. **Meiracyllium wendlandi,** Rchb. f. Beitr. Orch. Centr.-Am. p. 73.

GUATEMALA, Rio Sucio (*Wendland*).

10. MICROSTYLIS.

Microstylis, Nutt. Gen. N. Am. Pl. ii. p. 196; Benth. et Hook. Gen. Plant. iii. p. 494.

A genus of about forty species, widely dispersed in the northern hemisphere, with two or three in South America. They are most numerous in Asia and Central America.

1. **Microstylis brachystachys,** Rchb. f. in Linnæa, xxii. p. 834; Walp. Ann. iii. p. 526.

SOUTH MEXICO, Real del Monte (*Ehrenberg*).

2. **Microstylis cordata,** Rchb. f. in Walp. Ann. vi. p. 207.

Dienia cordata, Lindl. in Bot. Reg. 1838, Misc. p. 73.

MEXICO, imported and cultivated by Mr. Barker.

3. **Microstylis crispata,** Rchb. f. in Walp. Ann. vi. p. 207.

Dienia crispata, Lindl. in Ann. Nat. Hist. xv. 1845, p. 385.

MEXICO, without locality (*Hartweg*). Hb. Kew.

4. **Microstylis crispifolia,** Rchb. f. Beitr. Orch. Centr.-Am. p. 100.

Costa Rica, Desengaño (*Wendland*).

5. **Microstylis fastigiata,** Rchb. f. in Linnæa, xxii. p. 834.

Dienia majanthemifolia, Rchb. f. in Linnæa, xix. p. 369.

Malaxis majanthemifolia, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 18.

South Mexico, Cordillera of Oaxaca, at 8000 feet (*Galeotti*, 5059).

6. **Microstylis ehrenbergii,** Rchb. f. in Linnæa, xxii. p. 835; Walp. Ann. iii. p. 526.

South Mexico, Real del Monte (*Ehrenberg*).

7. **Microstylis excavata,** Lindl. Bot. Reg. 1838, Misc. p. 51.

Mexico (*Barker*, cult.).

8. **Microstylis hastilabia,** Rchb. f. Beitr. Orch. Centr.-Am. p. 101.

Costa Rica, Volcan de Barba, at 8000 feet (*Wendland*).

9. **Microstylis histionantha,** Link, Kl. et Otto, Ic. Pl. Rar. Hort. Berol. p. 11, t. 5; Bot. Mag. t. 4103.

Microstylis parthoni, Rchb. f. Walp. Ann. vi. p. 206; Beitr. Orch. Centr.-Am. pp. 59 et 100.

Malaxis parthoni, Morr. in Bull. Acad. Roy. Brux. 1839, p. 485, cum icone.

Nicaragua, without locality (*Œrsted*); Costa Rica, San José &c. (*Wendland*).

10. **Microstylis ichthyorrhyncha,** Rchb. f. Beitr. Orch. Centr.-Am. p. 99.

Malaxis ichthyorrhyncha (lapsu calami "*ichthyorhyncha*") et *M. cochleariæfolia,* A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 18.

Microstylis cochleariæfolia, Rchb. f. in Linnæa, xxii. p. 834; Walp. Ann. iii. p. 626.

South Mexico, Huatusco (*Galeotti*), without locality (*Leibold*); Costa Rica, Volcan de Barba (*Wendland*).

11. **Microstylis lagotis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 101.

Costa Rica, Volcan de Barba, at 9000 feet (*Wendland*).

12. **Microstylis majanthemifolia,** Rchb. f. in Linnæa, xxii. p. 834.

Malaxis majanthemifolia, Cham. et Schl. in Linnæa, vi. p. 59.

Mexico (*Schiede & Deppe*).

13. **Microstylis macrostachya,** Lindl. Gen. & Sp. Orch. Pl. p. 21; Walp. Ann. vi. p. 207; Rchb. f. Beitr. Orch. Centr.-Am. p. 99.

Dienia calycina, Lindl. Gen. & Sp. Orch. p. 23.

Ophrys macrostachya, Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 9.

South Mexico, near Jesus del Monte (*La Llave*), Anganguio 9000 feet (*Hartweg*), Cordillera of Oaxaca at 8000 feet (*Galeotti*, 5053); Costa Rica, at the foot of Volcan de Barba, 5000 feet (*Wendland*). Hb. Kew.

14. **Microstylis myurus,** Rchb. f. in Walp. Ann. vi. p. 207.

Dienia myurus, Lindl. Gen. & Sp. Orch. Pl. p. 23.

Pedilea, Lindl. Orchid. Sceletos, p. 21. n. 144, cum icone.

Mexico (hb. *Pavon*).

15. **Microstylis ophioglossoides,** Nutt. Gen. N. Am. Pl. ii. p. 196; Lindl. Gen. & Sp. Orch. Pl. p. 19; Bot. Reg. t. 1290 (β. *mexicana*).

Malaxis ophioglossoides, Willd.; Lodd. Bot. Cab. t. 1116.

CANADA, southward through the eastern States.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 859). Hb. Kew.

16. **Microstylis simillima,** Rchb. f. Beitr. Orch. Centr.-Am. p. 101.

COSTA RICA, Desengaño (*Wendland*).

17. **Microstylis tipuloides,** Lindl. in Ann. Nat. Hist. xv. 1845, p. 256; Rchb. f. Beitr. Orch. Centr.-Am. p. 102.

COSTA RICA, San Miguel (*Wendland*).—PERU.

18. **Microstylis umbellulata,** Lindl. Gen. & Sp. Orch. Pl. p. 19; Griseb. Fl. Brit. W. Ind. p. 612.

Malaxis umbellulata, Sw. Prodr. p. 119.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1303), Mirador (*Linden*, 197), Cordillera of Oaxaca, at 8500 feet (*Galeotti*, 5059), Zimapan (*Coulter*, 1529).—WEST INDIES and nothern part of SOUTH AMERICA. Hb. Kew.

19. **Microstylis,** sp.

GUATEMALA, Volcan de Fuego, at 6400 feet (*Salvin*). Hb. Kew.

20. **Microstylis,** sp.

GUATEMALA, Camino del Sapote (*Bernoulli*, 327). Hb. Kew.

21. **Microstylis,** sp.

SOUTH MEXICO, Cordillera of Oaxaca, at 7500 feet (*Galeotti*, 5012). Hb. Kew.

22. **Microstylis,** sp.

NORTH MEXICO, Sierra Madre (*Seemann*, 1957). Hb. Kew.

Malaxis elliptica, *M. thlaspiformis*, *M. monticola*, and *M. oblongifolia*, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 18, are doubtful plants that may belong to *Microstylis* or *Liparis*.

11. ANDROCHILUS.

Androchilus, Liebm. in Forh. Skand. Naturf. Möde, iv. p. 197; Benth. et Hook. Gen. Plant. iii. p. 1225.

A doubtful genus of this affinity, described as having a distinct subulate filament three quarters of a line long.

1. **Androchilus campestris,** Liebm. in Forh. Skand. Naturf. Möde, iv. p. 197.

SOUTH MEXICO, Mirador, Vera Cruz (*Liebmann*).

12. LIPARIS.

Liparis, L. C. Rich. in Mém. Mus. Par. iv. p. 52, t. 5. fig. 10; Benth. et Hook. Gen. Plant. iii. p. 495.

About 100 species, widely dispersed in the temperate and warmer regions of both hemispheres.

1. **Liparis alata,** Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1842, p. 293.

Mexico.

2. **Liparis (Sturmia) arnoglossophylla,** Rchb. f. in Bonplandia, 1856, p. 217.

New Spain (hb. *Pavon*).

3. **Liparis bituberculata,** Lindl. Bot. Reg. sub t. 882; Rchb. f. Beitr. Orch. Centr.-Am. p. 98.

Cymbidium? *bituberculatum*, Hook. Exot. Fl. ii. t. 116.
Liparis elata, Lindl. Bot. Reg. t. 1175.
Sturmia bituberculata, Rchb. f. in Bonplandia, 1854, p. 22.

Costa Rica, La Muella (*Wendland*).—Venezuela.

4. **Liparis elliptica,** Griseb. Fl. Brit. W. Ind. p. 612.

Sturmia elliptica, Rchb. f. in Linnæa, xxii. p. 833?

South Mexico, Cordillera of Vera Cruz (*Galeotti*, 5138), Mirador (*Linden*, 199; *Sartorius*).—Jamaica; Trinidad; Venezuela; Guiana. Hb. Kew.

Perhaps more than one species concerned here.

5. **Liparis wendlandi,** Rchb. f. Beitr. Orch. Centr.-Am. p. 98.

Costa Rica, San José (*Wendland*).

Malaxis galeottiana and *M. lindeniana*, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 18, from Mexico, are represented in Lindley's herbarium at Kew, by sketches, which are placed in *Liparis*. Another plant in the same genus from Morelia, 7000 feet (*Galeotti*, 5213), is named *Cymbidium vexilliferum*, Llav. et Lex. (Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 11).

13. CORALLORHIZA.

Corallorhiza, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 209; Benth. et Hook. Gen. Plant. iii. p. 497.

About twelve species have been published; but they are very much confused in herbaria. They inhabit Europe, extra-tropical Asia, and especially North America, extending into Mexico.

1. **Corallorhiza ehrenbergii,** Rchb. f. in Linnæa, xxii. p. 833; Walp. Ann. iii. p. 526.

South Mexico, between Real del Monte and Chica (*Ehrenberg*).

2. **Corallorhiza grandiflora,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 19.

MEXICO.

3. **Corallorhiza mexicana,** Lindl. Gen. & Sp. Orch. Pl. p. 534.

Corallorhiza bulbosa, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 19?

SOUTH MEXICO, Oaxaca, 7000 to 9000 feet (*Galeotti*, 5057), Mineral del Monte (*Schiede & Deppe*); GUATEMALA, without locality (*Hartweg*). Hb. Kew.

14. HEXALECTRIS.

Hexalectris, Rafin. Neogen. p. 4; Benth. et Hook. Gen. Plant. iii. p. 498.

A monotype.

1. **Hexalectris aphylla,** Benth. in Journ. Linn. Soc. xviii. p. 296.

Bletia aphylla, Nutt. Gen. N. Am. ii. p. 194; Blume, Orchid. Jav. p. 18, t. 6.

NORTH CAROLINA to FLORIDA and TEXAS.—NORTH MEXICO, Sierra Madre (*Palmer*, 2006), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 861); SOUTH MEXICO, Zimapan (*Coulter*, 1533), between Chila and Huanapan (*Andrieux*, 86). Hb. Kew.

15. BULBOPHYLLUM.

Bulbophyllum, Thouars, Orch. Iles Afr. tab. esp. p. 3, et ic. t. 93 ad 97, et 99 ad 110; Benth. et Hook. Gen. Plant. iii. p. 501.

About eighty species are known, the greater part inhabiting Tropical Africa and Asia, a very few America and Australia, and one only New Zealand.

1. **Bulbophyllum aristatum,** Hemsley.

Bolbophyllaria aristata, Rchb. f. Beitr. Orch. Centr.-Am. p. 60.

CENTRAL AMERICA (*Ærsted*).

2. **Bulbophyllum ærstedii,** Hemsley.

Bolbophyllaria ærstedii, Rchb. f. in Bonplandia, 1855, p. 223; Beitr. Orch. Centr.-Am. p. 60; Walp. Ann. vi. p. 241.

NICARAGUA, Esquipulas, Segovia (*Ærsted*).

3. **Bulbophyllum sordidum,** Lindl. Bot. Reg. 1840, Misc. p. 89.

Bolbophyllaria sordida, Rchb. f. in Walp. Ann. vi. p. 242.

GUATEMALA, cultivated by Mr. Bateman, and probably introduced by Skinner.

16. CŒLIA.

Cœlia, Lindl. Gen. & Sp. Orch. Pl. p. 36, et Bot. Reg. 1842, t. 36; Benth. et Hook. Gen. Plant. iii. p. 508.

About five species, restricted to the West Indies, Mexico, and Central America.

1. **Cœlia bauerana,** Lindl. Gen. & Sp. Orch. Pl. p. 36; Bot. Reg. 1842, t. 36; Bauer, Ill. Orch. Gen. t. 3 (quoad antheram et pollinia erronea).

Cœlia triptera, G. Don. sec. Steud. Nomencl. Bot.; Griseb. Fl. Brit. W. Ind. p. 629.
Cymbidium tripterum, Sw. N. Act. Ups. vi. p. 70; Ait. Hort. Kew. ed. 2, v. p. 214.
Epidendrum tripterum, Sm. Ic. Pict. t. 14.

South Mexico, valley of Cordova (*Bourgeau*, 2079).—Cuba; Jamaica. Hb. Kew.

2. **Cœlia bella,** Rchb. f. in Walp. Ann. vi. p. 218; Bot. Mag. t. 6628.
Bifrenaria bella, Lemaire, Jard. Fleur. iii. t. 325.
Bothriochilus bellus, Lemaire, Ill. Hort. iii. Misc. p. 30.

Guatemala (*Skinner*). Hb. Kew.

3. **Cœlia guatemalensis,** Rchb. f. in Walp. Ann. vi. p. 219.

Guatemala (*Skinner*). Hb. Kew.

4. **Cœlia macrostachya,** Lindl. in Benth. Pl. Hartw. p. 92; Bot. Reg. 1842, sub t. 36; Bot. Mag. t. 4712 (ic. in Fl. des Serres, t. 900 repetita); Rchb. f. Beitr. Orch. Centr.-Am. p. 41 (varietates).

South Mexico, Hacienda de la Laguna (*Hartweg*), Zacuapan (*Leibold*), Jalapa (*Schiede*), Cordillera of Oaxaca, at 7000 feet (*Galeotti*, 5016). Hb. Kew.

There is another species of this genus from Guatemala in the Lindley herbarium at Kew, bearing a manuscript name.

17. BLETIA.

Bletia, Ruiz et Pav. Prodr. Fl. Peruv. et Chil. 119, t. 26; Benth. et Hook. Gen. Plant. iii. p. 513.

About twenty species in Tropical America, with one or two in China and Japan.

1. **Bletia adenocarpa,** Rchb. f. in Bonplandia, 1856, p. 216; Walp. Ann. vi. p. 440.

South Mexico, Talea (*Galeotti*, 5345). Hb. Kew.

2. **Bletia anomala,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 23; Walp. Ann. vi. p. 443.

Mexico.

3. **Bletia campanulata,** Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 17; Benth. Pl. Hartw. p. 72; Bonplandia, 1854, p. 22; Walp. Ann. vi. p. 442.

South Mexico, region of Orizaba (*Bourgeau*, 2812), Teojomulco (*Hartweg*). Hb. Kew.

4. **Bletia coccinea,** Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 16; Lindl. Gen. & Sp. Orch. Pl. p. 122; Benth. Pl. Hartw. p. 53.

South Mexico, Talea (*Galeotti*, 5347), Rancho de Aguacate (*Hartweg*). Hb. Kew.

5. **Bletia florida,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 206; Lindl. Gen. & Sp. Orch. Pl. p. 121; Walp. Ann. vi. p. 442; Bot. Reg. t. 1401.
Gyas florida, Salisb. in Trans. Hort. Soc. Lond. i. p. 299.
Bletia pallida, Lodd. Bot. Cab. t. 629.
Limodorum floridum, Salisb. Prodr. p. 9.

South Mexico, Mirador (*Sartorius*); Panama, Veraguas (*Seemann*, 317).—Venezuela; Jamaica; Trinidad. Hb. Kew.

6. **Bletia fulgens,** Rchb. f. in Bonplandia, 1855, p. 221; Walp. Ann. vi. p. 441.

South Mexico, near Cuernavaca (*Ghiesbreght*). Hb. Kew.

7. **Bletia gracilis,** Lodd. Bot. Cab. t. 1977; Bot. Reg. t. 1681; Walp. Ann. vi. p. 440.

South Mexico, Temascaltepec (*Schiede*); Guatemala, Dueñas (*Fraser*). Hb. Kew.

[*Bletia havanensis*, Lindl. Bot. Reg. 1838, Misc. n. 35, has been reported from Panama, and some of the synonyms we have placed under *B. verecunda*, R. Br., may perhaps belong to this species.]

8. **Bletia jucunda,** Linden et Rchb. f. in Bonplandia, 1855, p. 221; Walp. Ann. vi. p. 441.

South Mexico, Michoacan (*Ghiesbreght*). Hb. Kew.

9. **Bletia lilacina,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 23; Walp. Ann. vi. p. 443.

Mexico.

10. **Bletia parkinsoni,** Hook. Bot. Mag. t. 3736; Walp. Ann. vi. p. 440.

South Mexico, without locality (*Parkinson*). Hb. Kew.

We have only seen cultivated specimens.

11. **Bletia reflexa,** Lindl. Bot. Reg. t. 1760; Walp. Ann. vi. p. 441.

Mexico. Imported and cultivated by Messrs. Loddiges. Only cultivated specimens in Kew herbarium.

12. **Bletia roezlii,** Rchb. f. in Linnæa, xli. p. 7.

Mexico, without locality (*Roezl*).

13. **Bletia secunda,** Lindl. Bot. Reg. 1840, Misc. n. 120; Walp. Ann. vi. p. 440.

Eulophia dilatata, Lindl. in Ann. Nat. Hist. 1842, x. p. 184.

South Mexico, without locality (*Karwinski*), Chicahuastla (*Galeotti*, 5304). Hb. Kew.

14. **Bletia verecunda,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 206; Lindl. Gen. & Sp. Orch. Pl. p. 121.

Helleborine americana, Martyn, Hist. Pl. Rar. t. 50; Mill. Fig. Pl. t. 145.

Limodorum altum, Linn. Syst. Veg. p. 680; Jacq. Ic. Pl. Rar. iii. p. 17, t. 602 (*tuberosum* in tab.) Bot. Mag. t. 930.

Limodorum verecundum, Salisb. Prodr. p. 9.

Cymbidium verecundum, Sw. Nov. Act. Soc. Sci. Upsal. vi. p. 75.

Gyas verecunda, Salisb. in Trans. Hort. Soc. Lond. i. p. 299.

Limodorum tuberosum, Jacq. Coll. iv. p. 108.
Limodorum purpureum, Lam. Encycl. iii. p. 515; Red. Liliac. t. 83.
Bletia purpurea, DC. huit. not. Pl. Rar. Jard. Gen. p. 23.
Cymbidium altum, Willd. n. 44; Pers. Syn. ii. p. 516.
Bletia acutipetala, Hook. Bot. Mag. t. 3217.

South Mexico, Mirador (*Liebmann*, 376, 377), valley of Cordova (*Bourgeau*, 2208); Guatemala, Dueñas (*Wendland*), common in the marshy ground round the lake of Dueñas (*Godman & Salvin*); Nicaragua, Volcan de Masaya (*Œrsted*).—Jamaica; Cuba. Hb. Kew.

There are several unnamed specimens in Kew herbarium that may belong to this species, which seems to be a very common one, though we are not sure that the foregoing names do not represent more than one species. *Bletia shepherdii*, Hook. Bot. Mag. t. 3319, sometimes associated with *B. verecunda*, seems to differ in its broader leaves &c.

18. CHYSIS.

Chysis, Lindl. Bot. Reg. t. 1937, et 1841, t. 23; Benth. et Hook. Gen. Plant. iii. p. 514.

An exclusively Tropical-American genus, ranging from Mexico to Venezuela and Colombia. Six or eight species have been published, though some of them are rather varieties of each other than distinct species.

1. **Chysis aurea**, Lindl. Bot. Reg. t. 1937; Bot. Mag. t. 3617; Walp. Ann. vi. p. 471.

β. **maculata**, Hook. Bot. Mag. t. 4576, icon. in Fl. des Serres, t. 671, et in Lemaire, Jard. Fleur. t. 121 iterata.

γ. **limminghii**, Lemaire, Ill. Hort. 1860, t. 240; Hook. Bot. Mag. 1861, t. 5265; Warn. Sel. Orch. ser. 1, t. 34; Lindl. et Rchb. f. in Otto & Dietr. Allg. Gart. Zeit. 1858, p. 380 (species)?; Rchb. f. Beitr. Orch. Centr.-Am. p. 43, in obs. sub *C. aurea*.

South Mexico, Chiapas (*Ghiesbreght*); Panama.—Venezuela. Hb. Kew.

Dr. Reichenbach states that *C. limminghii*, Lind. et Rchb. f. is a good species, distinguishable from *C. aurea*, Lindl., in the dark; but we are not sure that the plant figured in the 'Botanical Magazine' and 'L'Illustration Horticole' as *C. aurea limminghii* is the true plant, though it most likely is.

2. **Chysis bractescens**, Lindl. Bot. Reg. 1840, Misc. n. 131, et 1841, t. 23; Bot. Mag. t. 5186; Walp. Ann. vi. p. 472.

Mexico, imported and cultivated by Mr. Barker. Cultivated specimens only in Kew herbarium.

3. **Chysis lævis**, Lindl. Bot. Reg. 1840, Misc. n. 130; Batem. Orch. Mex. et Guat. t. 31; Ill. Hort. t. 365; Warn. Sel. Orch. ser. 2, t. 14; Walp. Ann. vi. p. 472.

Mexico, imported and cultivated by Mr. G. Barker. Cultivated specimens only in Kew herbarium.

19. CALANTHE.

Calanthe, R. Br. in Bot. Reg. sub tt. 573 et 720; Benth. et Hook. Gen. Plant. iii. p. 520.

There are about forty known species of this genus, mostly inhabiting Tropical Asia, the rest being widely scattered in Japan, the Pacific Islands, New Caledonia, the Mascarene Islands, Tropical and South-eastern Africa, the West Indies, Mexico, and Central America.

1. **Calanthe mexicana,** Rchb. f. in Linnæa, xviii. p. 406; Orch. Eur. (Ic. Fl. Germ.), t. 355. figg. 5, 6 et 7; Beitr. Orch. Centr.-Am. p. 79; Walp. Ann. vi. p. 912.
Ghiesbreghtia calanthoides, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 28.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*), Orizaba (*Bourgeau*, 3007), San Cristobal (*Botteri*, 239), Zacuapan (*Leibold*); COSTA RICA, Desengaño (*Wendland*). Hb. Kew.

20. ELLEANTHUS.

Elleanthus, Presl. Reliq. Hænk. i. p. 97; Benth. et Hook. Gen. Plant. iii. p. 522.

A Tropical-American genus of nearly fifty species, extending from Central America and the West Indies to Peru and Brazil, but most numerous in Colombia and Peru.

1. **Elleanthus capitatus,** Rchb. f. in Walp. Ann. vi. p. 475.
Evelyna capitata, Pœpp. et Endl. Nov. Gen. et Sp. i. p. 32, t. 56; Griseb. Fl. Brit. W. Ind. p. 622.
Bletia capitata, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 206.

SOUTH MEXICO, valley of Cordova (*Bourgeau*); GUATEMALA, without locality, cultivated by Loddiges.—VENEZUELA to PERU and BRAZIL, and in the WEST INDIES. Hb. Kew.

2. **Elleanthus hymenophorus,** Rchb. f. in Walp. Ann. vi. p. 480; Beitr. Orch. Centr.-Am. pp. 42 et 89.
Evelyna hymenophora, Rchb. f. in Bot. Zeit. 1852, p. 710.

COSTA RICA, Naranjo (*Wendland*); PANAMA, Volcan de Chiriqui, at 6000 to 7000 feet (*Warscewicz*).

3. **Elleanthus,** sp., Rchb. f. Beitr. Orch. Centr.-Am. p. 42, sine nomine.
PANAMA, Volcan de Chiriqui (*Warscewicz*).

4. **Elleanthus,** sp.
NICARAGUA, Chontales (*Seemann*, 193). Hb. Kew.

5. **Elleanthus,** sp.
NICARAGUA, Chontales (*Tate*, 271). Hb. Kew.
This is very near *E. linifolius*, Presl. Reliq. Hænk. i. p. 97, *Evelyna graminifolium*, Pœpp. et Endl. Nov. Gen. et Sp. i. p. 33, t. 58.

6. **Elleanthus,** sp.
NICARAGUA, Chontales (*Tate*, 194). Hb. Kew.

7. **Elleanthus,** sp.

GUATEMALA (*Bernoulli*, 313). Hb. Kew.

In addition to the foregoing, and probably different from them, there are in the Lindley herbarium two species, numbered 7 and 8, collected by Wright in Nicaragua There is also one cultivated specimen of a broad-leaved species, near *E. capitatus*, recorded as native of Guatemala.

[*Amblostoma cernuum*, Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 83=*A. tridactylum*, Rchb. f. Refug. Bot. ii. t. 101, and first recorded from Mexico, is only known with certainty to inhabit Brazil, and is probably not Mexican.]

21. SERAPHYTA.

Seraphyta, Fisch. et Mey. in Bull. Acad. Sc. St. Pétersb. vii. (1840), p. 25; Benth. et Hook. Gen. Plant. iii. p. 523.

A monotype.

1. **Seraphyta multiflora,** Fisch. et Mey. in Bull. Acad. Sc. St. Pétersb. vii. 1840), p. 25.

Epidendrum diffusum, Sw. Fl. Ind. Occ. iii. p. 1503; Griseb. Fl. Brit. W. Ind. p. 619; Lindl. Gen. & Sp. Orch. Pl. p. 102; Bot. Mag. t. 3565; Lodd. Bot. Cab. t. 846.

SOUTH MEXICO, Mirador (*Liebmann*), Hacienda de la Laguna (*Schiede*); CUBA; JAMAICA; GUIANA. Hb. Kew.

22. HORMIDIUM.

Hormidium, Lindl. in Hook. Journ. Bot. iii. p. 81 (*Epidendri* sect.); Benth. et Hook. Gen. Plant. iii. p. 524.

About seven species are known, ranging from Mexico and Cuba to Brazil.

1. **Hormidium miserum,** Benth. et Hook. Gen. Plant. iii. p. 524.

Epidendrum miserum, Lindl. Bot. Reg. 1841, Misc. p. 37; Fol. Orch. n. 85; Walp. Ann. vi. p. 346.

SOUTH MEXICO, Oaxaca (*Loddiges*). Hb. Kew.

2. **Hormidium pulchellum,** Benth. et Hook. Gen. Plant. iii. p. 524.

Epidendrum pulchellum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 21; Walp. Ann. vi. p. 354.

SOUTH MEXICO, Cordillera of Oaxaca, 6500 to 7500 feet (*Galeotti*, 5039). Hb. Kew.

3. **Hormidium pygmæum,** Benth. et Hook. Gen. Plant. iii. p. 524.

Epidendrum pygmæum, Hook. Journ. Bot. i. p. 49, t. 118; Bot. Mag. t. 3233; Lindl. Fol. Orch. n. 84.

Epidendrum uniflorum, Lindl. Bot. Reg. 1839, Misc. p. 15.

MEXICO (*Barker*).—CUBA and JAMAICA to TRINIDAD and BRAZIL. Hb. Kew.

23. HEXISEA.

Hexisea, Lindl. in Hook. Journ. Bot. i. p. 7; Benth. et Hook. Gen. Plant. iii. p. 524.

Three or four species, restricted to Tropical America, and ranging from Mexico to Brazil.

1. **Hexisea bidentata,** Lindl. in Hook. Journ. Bot. i. p. 8; Walp. Ann. vi. p. 470; Rchb. f. Beitr. Orch. Centr.-Am. p. 55.

NICARAGUA, Pantasma, Segovia (*Ærsted*); PANAMA and WEST COLOMBIA (*Cuming*). Hb. Kew.

2. **Hexisea oppositifolia,** Rchb. f. in Walp. Ann. vi. p. 470.

Epidendrum oppositifolium, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 21.
Euothonæa oppositifolia, Rchb. f. in Bot. Zeit. 1852, p. 772.
Diothonæa oppositifolia, Rchb. f. in. Linnæa, xxii. p. 842.

SOUTH MEXICO, Oaxaca, at 5000 feet (*Galeotti*). Hb. Kew.

3. **Hexisea,** sp., Rchb. f. Beitr. Orch. Centr.-Am. p. 42, sine nomine.

CENTRAL AMERICA (*Warscewicz*).

This may be the same as an unnamed species in the Lindley herbarium, collected by Warscewicz in Veraguas.

4. **Hexisea,** sp., Rchb. f. Beitr. Orch. Centr.-Am. p. 88.

COSTA RICA, La Muella (*Wendland*).

24. SCAPHYGLOTTIS.

Scaphyglottis, Pœpp. et Endl. Nov. Gen. et Sp. i. 58, t. 97 ad 100; Benth. et Hook. Gen. Plant. iii. p. 525.

About eight species, inhabiting Tropical America from Mexico to Brazil.

1. **Scaphyglottis behrii,** Benth. et Hook. f. Gen. Plant. iii. p. 525.

Ponera behrii, Rchb. f. in Bonplandia, 1855, p. 220; Walp. Ann. vi. p. 452.

PANAMA, Chagres (*Behr*).

2. **Scaphyglottis dubia,** Benth. et Hook. f. Gen. Plant. iii. p. 525.

Ponera dubia, Rchb. f. in Walp. Ann. vi. p. 452.
Isochilus? dubius, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 23.
Isochilus lividus, Lindl. Bot. Reg. 1839, Misc. p. 36.

SOUTH MEXICO, Jalapa (*Leibold*), without locality (*Barker*). Hb. Kew.

3. **Scaphyglottis fasciculata,** Hook. Ic. Pl. t. 317; Benth. Bot. Voy. 'Sulphur,' p. 172.

NICARAGUA, Realejo (*Sinclair*).

4. **Scaphyglottis kienastii.**

Ponera kienastii, Rchb. f. in Gard. Chron. n. s. vii. p. 810.

SOUTH MEXICO, Comascaltepec, Sultepec, &c. (*Kienast*).

5. **Scaphyglottis mesocopis,** Benth. et Hook. Gen. Plant. iii. p. 525.

Ponera mesocopis, Endr. et Rchb. f. Xenia Orch. ii. p. 222, t. 200.

Costa Rica (*Endres*).

6. **Scaphyglottis,** sp.

Nicaragua, Chontales (*Tate*, 262). Hb. Kew.

This is very near *S. fasciculata.*

7. **Scaphyglottis,** sp. ?

South Mexico, Cordillera of Vera Cruz, 3000 feet (*Galeotti*, 5112). Hb Kew.

8. **Scaphyglottis,** sp.

Nicaragua, Chontales (*Tate*, 190, 191). Hb. Kew.

25. HEXADESMIA.

Hexadesmia, A. Brongn. in Ann. Sc. Nat. sér. 2, xvii. p. 44; Benth. et Hook. Gen. Plant. iii. p. 525.

Besides the following there is one West-Indian species and one Brazilian.

1. **Hexadesmia bifida,** Rchb. f. in Refug. Bot. ii. sub t. 113, et Linnæa, xli. p. 84.

Mexico ?

2. **Hexadesmia brachyphylla,** Rchb. f. Beitr. Orch. Centr.-Am. p. 89.

Costa Rica, Turrialba (*Wendland*).

3. **Hexadesmia crurigera,** Lindl. Bot. Reg. 1844, Misc. p. 2; Walp. Ann. vi. p. 468 (errore *crucigera*); Rchb. f. Beitr. Orch. Centr.-Am. pp. 55 et 89; Xenia Orch. i. p. 168, t. 59; Refug. Bot. ii. t. 92.

Hexopia crurigera, Batem. ex Lindl. loc. cit.

Guatemala ? Costa Rica, Cartago 5000 feet, and Volcan de Irazu 9000 feet (*Œrsted*), Cartago (*Wendland*).

4. **Hexadesmia fasciculata,** A. Brongn. in Ann. Sc. Nat. sér. 2, xvii. p. 45; Bot. Reg. 1843, Misc. p. 16; Walp. Ann. vi. p. 468.

Hexadesmia lindeniana, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 23.

Mexico ? (*Linden*); Guatemala, Quezaltenango (*Hartweg*). Hb. Kew.

5. **Hexadesmia lurida,** Batem. Synop. Orch. in Orch. Mex. et Guat.

Mexico or Guatemala.

6. **Hexadesmia micrantha,** Lindl. Bot. Reg. 1844, Misc. p. 2; Walp. Ann. vi. p. 469; Rchb. f. Beitr. Orch. Centr.-Am. pp. 42, 56 et 89; Xenia Orch. i. p. 170, t. 59.

Guatemala (*Skinner*); Nicaragua, Segovia (*Œrsted*); Costa Rica, Santa Anna (*Wendland*); Panama, Boquete (*Seemann*, 1567), Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

7. **Hexadesmia rhodoglossa,** Rchb. f. in Bonplandia, 1856, p. 328.
MEXICO, imported and cultivated by Consul Schiller of Hamburg.

8. **Hexadesmia sessilis,** Rchb. f. in Refug. Bot. ii. sub t. 113, et in Linnæa, xli. p. 84.
SOUTH MEXICO, Trapiche de Santa Aña (*Galeotti*, 5331).

9. **Hexadesmia stenotepala,** Rchb. f. in Bonplandia, 1855, p. 221; Xenia Orch. i. p. 169, t. 59; Beitr. Orch. Centr.-Am. p. 56.
NICARAGUA, Tortuga (*Ærsted*).
In Kew herbarium there is an unnamed species of this genus (?) collected by Galeotti (n. 5030) in the Cordillera of Oaxaca, near the Pacific, at 3000 to 6000 feet.
Polystachya minuta, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 27, est forsan *Hexadesmia* ex Rchb. f. in Walp. Ann. vi. p. 644.

26. ALAMANIA.

Alamania, Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 31; Benth. et Hook. Gen. Plant. iii. p. 526.

An imperfectly known Orchid.

1. **Alamania punicea,** Llav. et Lex. Nov. Veg. Descr. fasc. ii., Orch. Opusc. p. 31; Lindl. Gen. et Sp. Orch. Pl. p. 153; Benth. Pl. Hartw. p. 72.
Epidendrum puniceum, Rchb. f. in Walp. Ann. vi. p. 323.
SOUTH MEXICO, near Vallisoleta (*La Llave*), Mount Talina (*Hartweg*). Hb. Kew.

27. PLEURANTHIUM.

Pleuranthium, Lindl. in Hook. Journ. Bot. iii. p. 81 (*Epidendri* sect.); Benth. et Hook. Gen. Plant. iii. p. 526.

About five or six species, whereof one inhabits Brazil, two Colombia or Peru, one Guatemala, and one Cuba.

1. **Pleuranthium,** sp.
GUATEMALA, without locality (*Skinner*). Hb. Kew.
The specimen is insufficient for description.

28. DIACRIUM.

Diacrium, Lindl. in Hook. Journ. Bot. iii. p. 81 (*Epidendri* sect.); Benth. in Journ. Linn. Soc. xviii. pp. 312 et 313; Benth. et Hook. Gen. Plant. iii. p. 526.

In addition to the following there is a fourth species in the West Indies.

1. **Diacrium bidentatum,** Hemsley.
Epidendrum bidentatum, Lindl. Gen. et Sp. Orch. Pl. p. 98; Fol. Orch. n. 81; Walp. Ann. vi. p. 345.
MEXICO, a sketch in the Lindley herbarium at Kew.

2. **Diacrium bigibberosum,** Hemsley.

Epidendrum bigibberosum, Rchb. f. in Walp. Ann. vi. p. 346.

GUATEMALA, imported and cultivated by Consul Schiller of Hamburg.

3. **Diacrium bilamellatum,** Hemsley.

Epidendrum bilamellatum, Rchb. f. in Walp. Ann. vi. p. 345.

PANAMA, Chagres (*Behr*).—VENEZUELA.

29. ISOCHILUS.

Isochilus, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 209; Benth. et Hook. Gen. Plant. iii. p. 527.

Four or five species are known, and they inhabit Tropical America from Mexico and the West Indies to Brazil.

1. **Isochilus carnosiflorus,** Lindl. in Gard. Chron. 1845, sec. Rchb. f. in Walp. Ann. vi. p. 448.

SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 9). Hb. Kew.

We have not succeeded in finding a description of this species. In Lindley's herbarium at Kew there is a specimen named "*Isochilus carnosiflorus*, Loddiges;" but there is no reference to a description. Linden's n. 9 bears the same name in herb. Kew. prop. in Dr. Reichenbach's handwriting.

2. **Isochilus crassiflorus,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22; Walp. Ann. vi. p. 448.

SOUTH MEXICO.

3. **Isochilus latibracteatus,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22; Walp. Ann. vi. p. 448.

SOUTH MEXICO, Cordillera of Vera Cruz, at 3000 feet (*Galeotti*, 5147). Hb. Kew.

4. **Isochilus linearis,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 209; Lindl. Gen. & Sp. Orch. Pl. p. 112; Bot. Reg. t. 745; Lodd. Bot. Cab. t. 1341; Rchb. f. Beitr. Orch. Centr.-Am. pp. 55 et 89.

Epidendrum lineare, Jacq. Stirp. Amer. t. 131; Andr. Bot. Rep. t. 445.

Cymbidium lineare, Willd. Sp. Pl. iv. p. 97.

SOUTH MEXICO, Orizaba (*Bourgeau*, 2511), Mirador (*Linden*, 204), Jalapa at 4000 feet, Michoacan at 4000 to 7000 feet, and Cordillera of Oaxaca (*Galeotti*, 5170, 5226, 5049), Colipa (*Liebmann*, 178); GUATEMALA, above Quiche (*Godman & Salvin*); NICARAGUA, Chontales (*Tate*, 187, 486); COSTA RICA, San José (*Wendland*), Volcan de Irazu at 10,000 feet (*Œrsted*).—VENEZUELA to BRAZIL, and CUBA to TRINIDAD. Hb. Kew.

Some of the above specimens may belong to the next species.

5. **Isochilus major,** Cham. et Schl. in Linnæa, vi. p. 60; Walp. Ann. vi. p. 447.

SOUTH MEXICO, near Jalapa (*Schiede & Deppe*), valley of Cordova (*Bourgeau*, 1913). Hb. Kew.

30. PONERA.

Ponera, Lindl. Gen. & Sp. Orch. p. 113; Benth. et Hook. Gen. Plant. iii. p. 527.

Besides the following, three or four species are reported from the north part of South America.

1. **Ponera albida,** Rchb. f. Beitr. Orch. Centr.-Am. p. 103.
COSTA RICA?, Llanos del Carmen (*Hoffmann*).

2. **Ponera amethystina,** Rchb. f. in Refug. Bot. ii. t. 93.
PANAMA, Santa Fé de Veraguas (*Skinner*).
The species was described and figured from one cultivated plant in the possession of the late W. W. Saunders.

3. **Ponera bilineata,** Rchb. f. Beitr. Orch. Centr.-Am. p. 88.
COSTA RICA, San Miguel (*Wendland*).

4. **Ponera graminifolia,** Lindl. Bot. Reg. 1839, Misc. p. 17; Walp. Ann. vi. p. 450.
Nemaconia graminifolia, Knowles & Westc. Fl. Cab. ii. p. 127.
SOUTH MEXICO, Jalapa (*Barker*). Hb. Kew.

5. **Ponera juncifolia,** Lindl. Gen. & Sp. Orch. Pl. p. 114; Walp. Ann. vi. p. 450.
MEXICO (hb. *Pavon*).

6. **Ponera macroglossa,** Rchb. f. in Bot. Zeit. 1852, p. 639; Xenia Orch. i. p. 44, t. 19; Walp. Ann. vi. p. 451.
GUATEMALA, without locality (*Skinner*). Hb. Kew.

7. **Ponera striata,** Lindl. Bot. Reg. 1842, Misc. p. 18; Lindl. & Paxt. Fl. Gard. ii. p. 29, fig. 149; Walp. Ann. vi. p. 450; Rchb. f. Beitr. Orch. Centr.-Am. p. 89.
SOUTH MEXICO, valley of Cordova (*Bourgeau*); GUATEMALA (*Wendland*). Hb. Kew.

8. **Ponera striolata,** Rchb. f. in Linnæa, xli. p. 39.
MEXICO? CENTRAL AMERICA?

31. HARTWEGIA.

Hartwegia, Lindl. Bot. Reg. sub tab. 1970; Benth. et Hook. Gen. Plant. iii. p. 528.

Of this genus there are two published species.

1. **Hartwegia gemma,** Rchb. f. in Gard. Chron. n. s. x. p. 8.
CENTRAL AMERICA?, imported and cultivated by Messrs. Veitch.

2. **Hartwegia purpurea,** Lindl. Bot. Reg. sub tab. 1970; Walp. Ann. vi. p. 445; Refug. Bot. t. 94.
SOUTH MEXICO, Jalapa (*Linden,* 29), Mirador (*Liebmann,* 309, 310), Vera Cruz

(*Hartweg*), Orizaba (*Müller*, 1414), without localities (*Schiede; Ehrenberg; Jurgensen; Galeotti; Leibold*). Hb. Kew.

Var. **angustifolia,** W. Booth in Bot. Reg. 1843, Misc. p. 45; Walp. Ann. vi. p. 445.

South Mexico, region of Orizaba (*Bourgeau*, 2465); Guatemala, without locality (*Skinner*). Hb. Kew.

32. EPIDENDRUM.

Epidendrum, Linn. Gen. Plant. n. 1016, *pro parte*; Benth. et Hook. Gen. Plant. iii. p. 528.

An exclusively American genus, ranging from the south-eastern States of North America, where there are very few species, through the West Indies and Mexico to Bolivia and South Brazil. One species is endemic in the Galapagos, and the only Orchid hitherto found in these islands. Upwards of 400 species have been described.

1. **Epidendrum aciculare,** Batem. in Bot. Reg. 1841, Misc. p. 46; Lindl. Fol. Orch. n. 44; Walp. Ann. vi. p. 333; Griseb. Fl. Brit. W. Ind. p. 613.

Epidendrum linearifolium, Hook. Bot. Mag. t. 4572.
Epidendrum esculentum, Hort. Kew. ex Lindl.
Epidendrum bractescens, Lindl. Bot. Reg. 1840, Misc. p. 58, et Fol. n. 43.

South Mexico, Cordillera of Oaxaca, at 3000 feet (*Galeotti*, 5103; *Hartweg*); Mirador (*Sartorius*).—Also recorded from the Bahamas. Hb. Kew.

2. **Epidendrum adenocarpum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 24; Lindl. Fol. Orch. n. 62; Walp. Rep. vi. p. 339.

Epidendrum crispatum, Knowles et Westc. Flor. Cab. ii. p. 79?
Epidendrum papillosum, Batem. in Bot. Reg. 1838, Misc. p. 7; Bot. Mag. t. 3631.

South Mexico, on the Irapean mountains (*La Llave*), Aguas Calientes (*Hartweg*); Guatemala (*Skinner*). Hb. Kew.

3. **Epidendrum adenocaulon,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 22; Lindl. Fol. Orch. n. 64; Walp. Ann. vi. p. 340.

South Mexico, on trees near Valladolid (*La Llave*).

4. **Epidendrum affine,** Rchb. f. in Bonplandia, 1856, p. 327.

Guatemala (*Skinner*). Hb. Kew.

5. **Epidendrum alatum,** Batem. Orch. Mex. & Guat. t. 18; Lindl. Fol. Orch. n. 53; Walp. Ann. vi. p. 336; Rchb. f. Beitr. Orch. Centr.-Am. p. 33.

Epidendrum longipetalum, Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 149, t. 30; Lem. Jard. Fleur. i. t. 81 (in Lindl. iterata).
Epidendrum calocheilum, Hook. Bot. Mag. t. 3898.
Epidendrum formosum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1853, p. 201.

Guatemala (*Skinner; Hartweg*); Nicaragua, San Juan (*Warscewicz*). Hb. Kew.

6. **Epidendrum amabile,** Lind. et Rchb. f. in Bonplandia, 1855, p. 219; Walp. Ann. vi. p. 332.

South Mexico, Michoacan (*Ghiesbreght*, 57). Hb. Kew.

7. **Epidendrum ambiguum,** Lindl. Fol. n. 56; Walp. Ann. vi. p. 338.

Epidendrum alatum, Lindl. Bot. Reg. 1847, t. 53, nec Batem.

Guatemala, specimen cultivated by Rucker. Hb. Kew.

8. **Epidendrum anceps,** Jacq. Sel. Stirp. Amer. p. 224, t. 138 (1763), non Swartz.

Epidendrum fuscatum, Smith, Spicil. Bot. p. 21, t. 23 (1792); Swartz, Nov. Act. Ups. vi. p. 69, ex Lindl. Gen. & Sp. Orch. Pl. p. 104; Lindl. Fol. Orch. n. 206; Bot. Reg. t. 67; Bot. Mag. t. 2844; Lodd. Bot. Cab. t. 887.

Amphiglottis lurida, Salisb. in Trans. Hort. Soc. Lond. i. p. 294.

β. **virescens,** Lindl. Fol. Orch. p. 65; Lodd. Bot. Cab. t. 1867 (species).

Epidendrum musciferum, Lindl. in Hook. Journ. Bot. i. p. 6.

γ. **viridipurpureum,** Lindl. Fol. Orch. p. 65; Hook. Bot. Mag. t. 3666 (species).

South Mexico (*Sartorius*); Panama (*Cuming*).—Apparently common in the West Indies, also in South America from Colombia to Guiana and Brazil. Hb. Kew.

The name *fuscatum* is usually retained for this species, and attributed to Swartz; but Smith was the first to use it.

9. **Epidendrum anisatum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 27; Lindl. Fol. Orch. n. 204; Walp. Ann. vi. p. 385.

Epidendrum gladiatum, Lindl. Gen. & Sp. Orch. p. 106, et in Benth. Pl. Hartw. p. 72.

South Mexico, on trees near Valladolid (*La Llave*), Rancho del Ojo de Agua (*Hartweg*). Hb. Kew.

10. **Epidendrum antenniferum,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 184, fig. 113; Refug. Bot. ii. t. 91; Walp. Ann. vi. p. 382; Lindl. Fol. Orch. n. 195.

Epidendrum longipetalum, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22.

South Mexico, Jalapa (*Henchman*), Talea (*Galeotti*, 5238), peak of Orizaba at 6000 to 7000 feet (*Liebmann*). Hb. Kew.

11. **Epidendrum arbusculum,** Lindl. in Benth. Pl. Hartw. p. 93; Fol. Orch. n. 277; Walp. Ann. vi. p. 410.

South Mexico, San Juan, Socotepec (*Hartweg*). Hb. Kew.

12. **Epidendrum aromaticum,** Batem. Orch. Mex. & Guat. t. 10; Lindl. Fol. Orch. n. 55; Walp. Ann. vi. p. 338; Refug. Bot. ii. t. 89.

Epidendrum incumbens, Lindl. Bot. Reg. 1840, Misc. p. 45.

Guatemala (*Skinner*). Hb. Kew.

13. **Epidendrum asperum,** Lindl. in Hook. Journ. Bot. i. p. 6; Fol. Orch. n. 61; Walp. Ann. vi. p. 339.

PANAMA (*Cuming*, 1250).—COLOMBIA; ECUADOR. Hb. Kew.

14. **Epidendrum atropurpureum,** Willd. Sp. Pl. iv. p. 115; Rchb. f. in Walp. Ann. vi. p. 344, et Beitr. Orch. Centr.-Am. pp. 33, 51 et 81.

Epidendrum macrochilum, Hook. Bot. Mag. t. 3534; Batem. Orch. Mex. & Guat. t. 17; Paxt. Mag. Bot. xi. p. 243, cum ic. color. in Fl. des Serres, iv. t. 372 iterata; Lindl. Fol. n. 79.

Cymbidium cordigerum, H. B. K. Nov. Gen. et Sp. i. p. 341.

GUATEMALA (*Skinner*, *Wendland*); NICARAGUA, Segovia (*Ærsted*); COSTA RICA, Guanacaste (*Ærsted*); PANAMA (*Sinclair*; *Cuming*).—CUBA; COLOMBIA; PERU. Hb. Kew.

15. **Epidendrum aurantiacum,** Batem. in Bot. Reg. 1838, Misc. p. 8, et Orch. Mex. & Guat. t. 12; Lindl. Fol. n. 1; Walp. Ann. vi. p. 311; Rchb. f. Beitr. Orch. Centr. Am. p. 80, et Xenia Orch. ii. p. 27.

Epidendrum aureum, Lindl. Fol. Orch. n. 5.

Broughtonia aurea, Lindl. Bot. Reg. 1840, Misc. p. 19.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 879), Oaxaca (*Karwinski*); GUATEMALA, Dueñas (*Godman & Salvin*), without locality (*Wendland*). Hb. Kew.

16. **Epidendrum auritum,** Lindl. Bot. Reg. 1843, Misc. p. 4, et Fol. Orch. n. 13; Walp. Ann. vi. p. 323.

Dinema paleaceum, Lindl. Bot. Reg. 1840, p. 51.

Epidendrum paleaceum, Rchb. f. Beitr. Orch. Centr.-Am. p. 80, et in Refug. Bot. ii. t. 87.

Epidendrum lindenianum, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 20.

Maxillaria boothii, Lindl. Bot. Reg. 1838, Misc. p. 52.

SOUTH MEXICO, Vera Cruz (*Linden*, 210), Orizaba (*Bourgeau*), region of Oaxaca (*Leibold*; *Liebmann*; *Galeotti*; *Jurgensen*; *Ehrenberg*); GUATEMALA, Mazatenango (*Bernoulli*); COSTA RICA, Turrialba (*Wendland*).—GUIANA. Hb. Kew.

17. **Epidendrum barbæ,** Rchb. f. Beitr. Orch. Centr.-Am. p. 83.

COSTA RICA, Volcan de Barba at 10,000 feet (*Wendland*).

18. **Epidendrum belizense,** Rchb. f. in Linnæa, xli. p. 78.

BRITISH HONDURAS, imported and cultivated by W. W. Saunders.

[*E. boothianum,* Lindl. Bot. Reg. 1838, Misc. p. 5, recorded as Cuban, is included in Bateman's list of the Orchids of Mexico and Guatemala.]

19. **Epidendrum brachiatum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 20; Rchb. f. in Gard. Chron. n. s. xiii. p. 648.

SOUTH MEXICO, Oaxaca (*Galeotti*).

Lindley reduced this to his *Epidendrum glaucum,* and the specimens he received from Galeotti (numbered 27 and 28) seem to be that species; but Reichenbach, who has the type-specimen, restores it to the rank of an independent species.

20. **Epidendrum brassavolæ,** Rchb. f. in Bot. Zeit. 1852, p. 729, et Beitr. Orch. Centr. Am. p. 35; Lindl. Fol. Orch. n. 7; Bot. Mag. t. 5664.

GUATEMALA (*Skinner*); PANAMA, Volcan de Chiriqui at 8000 feet (*Warscewicz*). Hb. Kew.

21. **Epidendrum caligarium,** Rchb. f. in Gard. Chron. 1869, p. 1110.

MEXICO.

22. **Epidendrum campylostalix,** Rchb. f. in Bot. Zeit. 1852, p. 730; Beitr. Orch. Centr.-Am. pp. 32 et 80, et Xenia Orch. ii. p. 28; Lindl. Fol. Orch. n. 2.

GUATEMALA (*Skinner*); COSTA RICA, Desengaño (*Wendland*), without locality (*Carmiol*); PANAMA, Veraguas (*Warscewicz*). Hb. Kew.

23. **Epidendrum candollei,** Lindl. Bot. Reg. 1839, Misc. p. 55, et Fol. Orch. n. 28; DC. Pl. Rar. Genev., huit. not. p. 15, t. 3; Walp. Ann. vi. p. 327.

Epidendrum cepiforme, Hook. Bot. Mag. t. 3765.

SOUTH MEXICO, Jalapa (*Linden,* 10), Oaxaca (*Ghiesbreght*), without locality (*Parkinson*). Hb. Kew.

24. **Epidendrum carinatum,** Lindl. Fol. Orch. n. 191; Walp. Ann. vi. p. 381.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen,* 647). Hb. Kew.

25. **Epidendrum centropetalum,** Rchb. f. Bot. Zeit. 1852, p. 732, et Beitr. Orch. Centr.-Am. pp. 37 et 54; Lindl. Fol. Orch. n. 215; Rchb. f. in Walp. Ann. vi. p. 388.

Œrstedella centropetala, Rchb. f. in Bot. Zeit. 1852, p. 932, et Xenia Orch. i. p. 40, t. 17. figg. 6–8.

Œrstedella centradenia, Rchb. f. loc. cit. ?

COSTA RICA, Volcan de Irazu at 7000 feet (*Œrsted*); PANAMA, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

We are in doubt whether Reichenbach would include *Œrstedella centradenia* in this species. In Walpers's 'Annales' it is cited under *Epidendrum centropetalum*, perhaps through a slip, for it is not given as a synonym in the later work, 'Beiträge zur Orchideenkunde Central-Amerikas.'

26. **Epidendrum chiriquense,** Rchb. f. in Bot. Zeit. 1852, p. 730; Walp. Ann. vi. p. 342; Beitr. Orch. Centr.-Am. p. 33; Xenia Orch. i. p. 164, t. 57.

Epidendrum varicosum, Batem. in Lind. Fol. Orch. n. 71, ex parte.

PANAMA, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

27. **Epidendrum chloe,** Rchb. f. in Bonplandia, 1856, p. 327.

GUATEMALA (*Skinner*). Hb. Kew.

28. **Epidendrum chloroleucum,** Hook. Bot. Mag. t. 3557; Walp. Ann. vi. p. 331.

Epidendrum chloranthum, Lindl. Bot. Reg. 1838, Misc. p. 25.

Epidendrum chloroleucum, var. *fusco-luteum,* Regel, Ind. Sem. Hort. Petrop. 1855, p. 19.

MEXICO (ex *Regel*).

The typical *E. chloroleucum* is a native of Guiana; therefore it is probable that Regel's variety belongs to another species.

29. **Epidendrum chlorops,** Rchb. f. in Gard. Chron. n. s. xiv. p. 524.
MEXICO, imported and cultivated by Messrs. Backhouse.

30. **Epidendrum chondylobolbon,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 20; Lindl. Fol. Orch. n. 131; Walp. Ann. vi. p. 360.
SOUTH MEXICO (*Galeotti*), Orizaba (*Bourgeau*, 3082). Hb. Kew.

31. **Epidendrum ciliare,** Jacq. Sel. Stirp. Am. p. 224, t. 179. fig. 89; Lindl. Fol. Orch. n. 90; Walp. Ann. vi. p. 347; Bot. Reg. t. 784.
Auliza ciliaris, Salisb. in Trans. Hort. Soc. Lond. i. p. 294.

β. **cuspidatum,** Lindl. Fol. Orch. p. 30; Walp. Ann. vi. p. 347; Lodd. Bot. Cab. t. 10 (species); Bot. Reg. t. 783.
Epidendrum ciliare, Bot. Mag. t. 463.

γ. **viscidum,** Lindl. Fol. Orch. p. 30, et Bot. Reg. 1840, Misc. p. 81 (species).
SOUTH MEXICO, Trapiche de la Concepcion (*Liebmann*, 452, 453, 454), Morelia at 4000 feet, and Cordillera of Oaxaca at 6500 feet (*Galeotti*, 5087, 5216); GUATEMALA (*Bernoulli*), common everywhere (*Godman & Salvin*).—WEST INDIES and Tropical SOUTH AMERICA, widely dispersed and common. Hb. Kew.

32. **Epidendrum clavatum,** Lindl. Bot. Reg. t. 1870, et Fol. Orch. n. 93; Walp. Ann. vi. p. 349.
Epidendrum purpurascens, Focke in Tijdschr. Natuurk. Wetensk. iv. p. 64.
COSTA RICA (*Warscewicz*).—COLOMBIA to GUIANA. Hb. Kew.

33. **Epidendrum clowesii,** Batem. in Bot. Reg. 1844, Misc. p. 16; Lindl. Fol. Orch. n. 170; Walp. Ann. vi. p. 373.
GUATEMALA (ex *Bateman*). Hb. Kew.

34. **Epidendrum cnemidophorum,** Lindl. Fol. Orch. n. 168; Walp. Ann. vi. p. 372; Bot. Mag. t. 5656.
GUATEMALA, at 7000 feet (*Skinner*). Hb. Kew.

35. **Epidendrum cochleatum,** L. Sp. Pl. ed. 2, p. 1351; Lindl. Fol. Orch. n. 128; Walp. Ann. vi. p. 359; Jacq. Ic. Pl. Rar. iii. t. 605; Bot. Mag. t. 572; Rchb. f. Beitr. Orch. Centr.-Am. pp. 52 et 83.
Anacheilium cochleatum, Hoffmansegg in Linnæa, xvi. Litt.-Ber. p. 229.
SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 896), Mirador (*Sartorius*), Zacuapan &c. (*Galeotti*, 5107), valley of Cordova (*Bourgeau*, 1922); GUATEMALA, very common and widely distributed (*Godman & Salvin*); NICARAGUA. Segovia (*Ærsted*); COSTA RICA, Turrialba (*Wendland*).—WEST INDIES, common; VENEZUELA. Hb. Kew.

36. **Epidendrum collare,** Lindl. Bot. Reg. 1843, Misc. p. 60, et Fol. Orch. n. 121; Walp. Ann. vi. p. 357.

GUATEMALA (*Hartweg*). Hb. Kew.

37. **Epidendrum concolor,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 25; Lindl. Fol. Orch. n. 40; Walp. Ann. vi. p. 332.

SOUTH MEXICO, on trees near Valladolid (*La Llave*).

38. **Epidendrum coriifolium,** Lindl. in Journ. Hort. Soc. Lond. vi. p. 218, cum ic. xylogr., et Fol. Orch. n. 240; Walp. Ann. vi. p. 400.

CENTRAL AMERICA (*Skinner*). Hb. Kew.

39. **Epidendrum costaricense,** Rchb. f. in Bot. Zeit. 1852, p. 937, et Beitr. Orch. Centr.-Am. p. 52; Walp. Ann. vi. p. 348; Lindl. Fol. Orch. n. 310.

COSTA RICA, Cartago el Viejo (*Œrsted*). Hb. Kew.

40. **Epidendrum costatum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 21; Lindl. Fol. Orch. n. 197; Walp. Ann. vi. p. 383.

SOUTH MEXICO (*Galeotti*). Hb. Kew.

41. **Epidendrum criniferum,** Rchb. f. in Gard. Chron. 1871, p. 1291, et n. s. ii. p. 419.

COSTA RICA, imported and cultivated by Messrs. Veitch of Chelsea.

42. **Epidendrum delicatissimum,** Rchb. f. in Linnæa, xli. p. 36.

CENTRAL AMERICA (ex *Reichenbach*).

43. **Epidendrum densiflorum,** Hook. Bot. Mag. t. 3791.

Epidendrum agathosmicum, Rchb. f. in Linnæa, xxii. p. 841; Walp. Ann. vi. p. 413; Lindl. Fol. Orch. n. 292.

Epidendrum rubro-cinctum, Lindl. Bot. Reg. 1843, Misc. p. 9.

MEXICO (*Parkinson*).—VENEZUELA.

44. **Epidendrum difforme,** Jacq. Sel. Stirp. Am. p. 223, t. 136; Rchb. f. in Walp. Ann. vi. p. 402, et Beitr. Orch. Centr.-Am. pp. 53 et 86.

Epidendrum umbellatum, Swartz, in Nov. Act. Ups. vi. p. 68; Bot. Mag. t. 2030; Lindl. Fol. Orch. n. 248; Griseb. Fl. Brit. W. Ind. p. 618.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3079); GUATEMALA, in woods near Samborondan (*Hartweg*); COSTA RICA, Cartago (*Wendland*), Matagalpa (*Œrsted*).—WEST INDIES; BRAZIL. Hb. Kew.

45. **Epidendrum diotum,** Lindl. Bot. Reg. 1843, Misc. p. 65, et Fol. Orch. n. 24; Walp. Ann. vi. p. 326.

GUATEMALA (*Hartweg*). Hb. Kew.

46. **Epidendrum distantiflorum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 19; Lindl. Fol. Orch. n. 9; Walp. Ann. vi. p. 323.

MEXICO; a sketch in the Lindley herbarium at Kew.

47. **Epidendrum eburneum,** Rchb. f. in Gard. Chron. 1867, pp. 404 et 544; Bot. Mag. t. 5643.

PANAMA, in swamps by the railway, a few miles from Colon (*P. Henderson*).

48. **Epidendrum elegans,** Rchb. f. in Walp. Ann. vi. p. 374.

Barkeria elegans, Knowles & Westc. Fl. Cab. ii. p. 7, cum ic. color.; Bot. Mag. t. 4784; Fl. des Serres, t. 959; Ill. Hort. t. 23.

MEXICO (*Ocampo*). Hb. Kew.

49. **Epidendrum ensatum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22; Lindl. Fol. Orch. n. 250; Walp. Ann. vi. p. 403.

MEXICO (*Galeotti*).

50. **Epidendrum equitans,** Lindl. Bot. Reg. 1838, Misc. p. 44, et Fol. Orch. n. 237; Walp. Ann. vi. p. 397; Rchb. f. Beitr. Orch. Centr.-Am. p. 53.

SOUTH MEXICO, valley of Cordova (*Hahn*), Mirador (*Liebmann*), Vera Cruz (*Hartweg*); NICARAGUA, Segovia, 4000 feet (*Œrsted*). Hb. Kew.

51. **Epidendrum erubescens,** Lindl. in Hook. Journ. Bot. iii. p. 87, et Fol. Orch. n. 95; Batem. Orch. Mex. & Guat. t. 32; Walp. Ann. vi. p. 350.

SOUTH MEXICO, region of Oaxaca, 7500 to 8500 feet (*Karwinski; Galeotti*, 5007; *Ghiesbreght*). Hb. Kew.

52. **Epidendrum exasperatum,** Rchb. f. Beitr. Orch. Centr.-Am. p. 85.

COSTA RICA, Naranjo and Cartago (*Wendland*).

53. **Epidendrum falcatum,** Lindl. in Ann. Nat. Hist. 1840, et Fol. Orch. n. 91, excl. syn. *Epidendrum parkinsonianum*, Hook., et *E. aloifolium*, Batem.; Walp. Ann. vi. p. 348; Rchb. f. Beitr. Orch. Centr.-Am. pp. 36 et 51, et Gard. Chron. n. s. ix. p. 724, sub *E. parkinsoniano.*

Epidendrum lactiflorum, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22.

MEXICO, Oaxaca (*Hartweg*). Hb. Kew.

54. **Epidendrum favoris,** Rchb. f. in Gard. Chron. n. s. ii. p. 98.

MEXICO, imported and cultivated by Messrs. Backhouse of York.

55. **Epidendrum firmum,** Rchb. f. Beitr. Orch. Centr.-Am. p. 87.

COSTA RICA, Cartago (*Wendland*).

56. **Epidendrum flabellatum,** Lindl. Fol. Orch. n. 15; Walp. Ann. vi. p. 324.

MEXICO (*Harris*). Hb. Kew.

57. **Epidendrum flavovirens,** Rchb. f. Beitr. Orch. Centr.-Am. p. 85.

GUATEMALA, Las Nubes (*Wendland*).

58. **Epidendrum floribundum,** H. B. K. Nov. Gen. et Sp. i. p. 353, t. 86; Bot. Mag. t. 3637; Lindl. Fol. Orch. n. 293, excl. syn. *E. densiflorum*; Rchb. f. Beitr. Orch. Centr.-Am. p. 85.

Costa Rica, between Naranjo and Cartago (*Wendland*).—Venezuela; Colombia. Hb. Kew.

59. **Epidendrum fragrans,** Swartz, Fl. Ind. Occ. iii. p. 1487; Lindl. Fol. Orch. n. 122; Bot. Mag. t. 1669; Lodd. Bot. Cab. t. 1039; Griseb. Fl. Brit. W. Ind. p. 615; Walp. Ann. vi. p. 357.

Epidendrum æmulum, Lindl. Bot. Reg. t. 1898?

Epidendrum lineatum, Salisb. Prodr. p. 10.

Guatemala (*Skinner*).—Southward to Ecuador and Brazil, and in the West Indies. Hb. Kew.

60. **Epidendrum fruticosum,** Pav. ex Lindl. Gen. & Sp. Orch. Pl. p. 101, et Fol. Orch. n. 202; Walp. Ann. vi. p. 384.

Mexico (hb. *Pavon*). Hb. Kew.

61. **Epidendrum funckianum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 21; Lindl. Fol. Orch. n. 282; Walp. Ann. vi. p. 410.

Mexico (*Galeotti*).

62. **Epidendrum galeottianum,** A. Rich. in Ann. Sc. Nat. sér. 3, iii. p. 21; Lindl. Fol. Orch. n. 200; Walp. Ann. vi. p. 383.

Mexico (*Galeotti*). A sketch in the Lindley herbarium, Kew.

63. **Epidendrum ghiesbreghtianum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 19; Rchb. f. in Gard. Chron. 1868, p. 815.

South Mexico, near Oaxaca (*Ghiesbreght; Liebmann*). Hb. Kew.

64. **Epidendrum globosum,** Jacq. Sel. Stirp. Am. p. 222, t. 133; Rchb. f. Beitr. Orch. Centr.-Am. p. 104.

Isochilus globosum, Lindl. Gen. & Sp. Orch. p. 112.

Cymbidium globosum, Swartz, Fl. Ind. Occ. p. 1467.

Nicaragua, Pearlkey Lagoon, Mosquito Coast (*Wullschlägel*).—West Indies; Guiana.

65. **Epidendrum glaucum,** Lindl. Bot. Reg. 1840, Misc. p. 29; Fol. Orch. n. 16, excl. syn. *E. brachiatum,* A. Rich. et Gal.

Epithecia glauca, Knowles & Westc. Fl. Cab. ii. t. 87.

Prosthechea glauca, ib. ii. p. 111.

Mexico (*Barker* cult.). Hb. Kew.

66. **Epidendrum glumibracteatum,** Rchb. f. in Hamb. Gart. Zeit. xvi. p. 11, et Beitr. Orch. Centr.-Am. p. 35.

Costa Rica (*Warscewicz*).

67. **Epidendrum gratiosum,** Rchb. f. in Bonplandia, 1856, p. 215.

New Spain (hb. *Ruiz & Pavon*).

68. **Epidendrum gravidum,** Lindl. in Journ. Hort. Soc. Lond. iv. p. 114, et Fol. Orch. n. 65 ; Walp. Ann. vi. p. 340.

South Mexico, near Xapatam (*Hartweg*). Hb. Kew.

69. **Epidendrum guttatum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 20 ; Lindl. Fol. Orch. n. 59 ; Walp. Ann. vi. p. 339.

Mexico (*Galeotti*).

70. **Epidendrum hanburii,** Lindl. Bot. Reg. 1844, Misc. p. 46, et Fol. Orch. n. 77 ; Walp. Ann. vi. p. 344 ; Reg. Gartenfl. t. 398.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 829 bis). Hb. Kew.

71. **Epidendrum hastatum,** Lindl. in Hook. Journ. Bot. iii. p. 82, et Fol. Orch. n. 21 ; Walp. Ann. vi. p. 310.

South Mexico, San Pedro, Oaxaca (*Karwinski*). Hb. Kew.

72. **Epidendrum imatophyllum,** Lindl. Gen. & Sp. Orch. Pl. p. 106, et Fol. Orch. n. 222 ; Walp. Ann. vi. p. 391 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 54.

Nicaragua (*Wright ; Œrsted*).— Guiana ; North Brazil. Hb. Kew.

73. **Epidendrum imbricatum,** Lindl. Gen. & Sp. Orch. Pl. p. 110, et Fol. Orch. n. 243 ; Walp. Ann. vi. p. 401 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 40.

Costa Rica, at 9000 to 10,000 feet (*Warscewicz*).—Brazil.

74. **Epidendrum incomptum,** Rchb. f. in Bot. Zeit. 1852, p. 733 ; Lindl. Fol. Orch. n. 278 ; Walp. Ann. vi. p. 410 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 38.

Guatemala, Coban (*Godman & Salvin*) ; Costa Rica (*Warscewicz*) ; Panama, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

75. **Epidendrum ionophlebium,** Rchb. f. Beitr. Orch. Centr.-Am. p. 103.

Costa Rica (*Hoffmann*).

76. **Epidendrum karwinskii,** Rchb. f. in Bonplandia, 1856, p. 327 (nomen nudum) ; Walp. Ann. vi. p. 399.

Isochilus cernuum, Lindl. in Ann. Nat. Hist. 1842, x. p. 184.

Mexico (*Karwinski*).

77. **Epidendrum lacertinum,** Lindl. Bot. Reg. 1841, p. 53, et Fol. Orch. n. 252 ; Journ. Hort. Soc. Lond. ii. p. 309 ; Walp. Ann. vi. p. 403.

Epidendrum indusiatum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1854, p. 177.

Guatemala (*Skinner ; Warscewicz*). Hb. Kew.

78. **Epidendrum lamprocaulon,** Rchb. f. in Bot. Zeit. 1852, p. 732 ; Lindl. Fol. Orch. n. 194 ; Walp. Ann. vi. p. 382.

South Mexico, Oaxaca (*Galeotti*, 5265). Hb. Kew.

79. **Epidendrum lancifolium,** Pavon, ex Lindl. Gen. & Sp. Orch. p. 98, et Fol. Orch. n. 129; Bot. Reg. 1842, t. 50; Walp. Ann. vi. p. 359.

South Mexico, without locality (hb. *Pavon*), Talea (*Hartweg*). Hb. Kew.

80. **Epidendrum latilabre,** Lindl. Bot. Reg. 1841, Misc. p. 77, et Fol. Orch. n. 249; Walp. Ann. vi. p. 403; Rchb. f. Beitr. Orch. Centr.-Am. p. 53.

Epidendrum virens, Hoffmannsegg in Linnæa, xvi. Litter.-Ber. p. 233?

Costa Rica, Cartago (*Œrsted*).—West Indies to Peru and Brazil.

81. **Epidendrum ledifolium,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 21; Lindl. Fol. Orch. n. 257; Walp. Ann. vi. p. 405.

Mexico (*Galeotti*), between San Luis Potosi and Tampico (*Palmer*, 1149). Hb. Kew.

82. **Epidendrum leucomelanum,** Rchb. f. in Linnæa, xli. p. 83, et in Refug. Bot. ii. sub tab. 140.

Mexico (*Schiede*).

83. **Epidendrum lignosum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 28; Lindl. Fol. Orch. n. 188; Walp. Ann. vi. p. 380.

South Mexico, mountains of Valladolid (*La Llave*).

84. **Epidendrum ligulatum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 26; Lindl. Fol. Orch. n. 10; Walp. Ann. vi. p. 323.

South Mexico, Irapean mountains (*La Llave*).

85. **Epidendrum limbatum,** Lindl. Bot. Reg. 1843, Misc. p. 69, et Fol. Orch. n. 17; Walp. Ann. vi. p. 325.

Guatemala (*Skinner*). Hb. Kew.

86. **Epidendrum lindleyanum,** Rchb. f. in Walp. Ann. vi. p. 375.

Barkeria lindleyana, Batem. in Bot. Reg. 1842, Misc. p. 2, et Orch. Mex. & Guat. t. 28; Bot. Mag. t. 6098.

South Mexico, Cordillera of Oaxaca at 5500 feet (*Galeotti*, 5068), Michoacan (*Karwinski*); Costa Rica (*Skinner*). Hb. Kew.

87. **Epidendrum linkianum,** Kl. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 298; Lindl. Fol. Orch. n. 39; Walp. Ann. vi. p. 332.

Epidendrum pastoris, Link et Otto, Ic. Pl. Rar. Hort. Bot. Berol. t. 12, nec Llav. et Lex.
Epidendrum tripterum, Lindl. in Hook. Journ. Bot. iii. p. 83, et Fol. Orch. n. 58.

South Mexico, near Teoxomulco, Oaxaca (*Karwinski*), without locality (*Deppe*). Hb. Kew.

88. **Epidendrum luteoroseum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 19; Lindl. Fol. Orch. n. 14; Walp. Ann. vi. p. 324.

Mexico (*Galeotti*).

89. **Epidendrum macrobotryum,** Lindl. ex Rchb. f. in Bonplandia, 1856, p. 327.

GUATEMALA.

90. **Epidendrum marmoratum,** A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 21; Lindl. Fol. Orch. n. 132; Walp. Ann. vi. p. 360; Rchb. f. in Gard. Chron. n. s. v. p. 688; Xenia Orch. iii. p. 32.

SOUTH MEXICO, Oaxaca (*Galeotti; Roezl*). Hb. Kew.

91. **Epidendrum melanocaulon,** Rchb. f. in Walp. Ann. vi. p. 375.

Barkeria melanocaulon, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 22.

SOUTH MEXICO, Oaxaca at 7000 feet (*Galeotti*, 5069), without locality (*Jurgensen*, 830). Hb. Kew.

92. **Epidendrum meliosmum,** Rchb. f. in Gard. Chron. 1869, p. 989.

MEXICO, imported and cultivated by W. W. Saunders.

93. **Epidendrum michuacanum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 26; Lindl. Fol. Orch. n. 72; Walp. Ann. vi. p. 342.

SOUTH MEXICO, mountains of Mechoacan and near Valladolid (*La Llave*).

94. **Epidendrum microbulbon,** Hook. Ic. Pl. t. 347; Lindl. Fol. Orch. n. 46; Walp. Ann. vi. p. 334.

SOUTH MEXICO, Oaxaca at 7000 feet (*Galeotti; R. Smith*). Hb. Kew.

95. **Epidendrum microcharis,** Rchb. f. in Gard. Chron. 1870, p. 124, et Xenia Orch. iii. p. 12, t. 208.

GUATEMALA, imported and cultivated by W. W. Saunders.

96. **Epidendrum microdendron,** Rchb. f. Beitr. Orch. Centr.-Am. p. 84.

COSTA RICA, Volcan de Barba (*Wendland*).

97. **Epidendrum myodes,** Rchb. f. Beitr. Orch. Centr.-Am. p. 86.

COSTA RICA, Naranjo and Volcan de Turrialba (*Wendland*).

98. **Epidendrum myrianthum,** Lindl. Fol. Orch. n. 184; Walp. Ann. vi. p. 378; Bot. Mag. t. 5556.

GUATEMALA, at a great elevation (*Skinner; Klee*). Hb. Kew.

99. **Epidendrum nævosum,** Lindl. Fol. Orch. n. 6; Walp. Ann. vi. p. 321.

SOUTH MEXICO, Oaxaca at 4000 feet (*Galeotti*, 5330). Hb. Kew.

100. **Epidendrum nemorale,** Lindl. in Hook. Journ. Bot. iii. p. 82, et Fol. Orch. n. 60; Walp. Ann. vi. p. 339.

Epidendrum verrucosum, Lindl. Bot. Reg. 1844, t. 51; Bot. Mag. t. 4606; Jard. Fleur. t. 253 (ic. Bot. Mag. iterata).

SOUTH MEXICO, near Sultepec (*Loddiges* cult.). Hb. Kew.

101. **Epidendrum nitens,** Rchb. f Beitr. Orch. Centr.-Am. p. 82.
GUATEMALA, Las Nubes (*Wendland*).

102. **Epidendrum nocturnum,** Jacq. Sel. Stirp. Amer. p. 225, t. 139; Lindl. Gen. & Sp. Orch. Pl. p. 105, et Fol. Orch. n. 254; Walp. Ann. vi. p. 404; Bot. Reg. t. 1961; Bot. Mag. t. 3298; Rchb. f. Beitr. Orch. Centr.-Am. p. 52; Lodd. Bot. Cab. t. 713.
Epidendrum discolor, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 22.
Epidendrum tridens, Poepp. et Endl. Nov. Gen. et Sp. ii. t. 103.
Epidendrum spruceanum, Lindl. Fol. Orch. n. 253.
SOUTH MEXICO (*Galeotti*); GUATEMALA, Yzabal (*Godman & Salvin*); NICARAGUA, Segovia (*Ærsted*).—COLOMBIA to PERU, GUIANA, and BRAZIL, and common in the WEST INDIES. Hb. Kew.

103. **Epidendrum nonchinense,** Rchb. f. in Walp. Ann. vi. p. 324, Refug. Bot. ii. t. 139, et Beitr. Orch. Centr.-Am. p. 103.
Broughtonia chinensis, Lindl. in Hook. Lond. Journ. Bot. i. p. 492.
Læliopsis chinensis, Lindl. in Lindl. & Paxt. Fl. Gard. iii. p. 156.
COSTA RICA, Ojo de Agua (*Hoffmann*). Hb. Kew.
Originally collected by Hinds in some part of Central America, and sorted into his Hongkong collections; hence Lindley's specific name.

104. **Epidendrum nubium,** Rchb. f. Beitr. Orch. Centr.-Am. p. 81.
GUATEMALA, Las Nubes (*Wendland*).

105. **Epidendrum obtusum,** A. DC. Pl. Rar. Genev. huit. not. p. 17; Lindl. Fol. Orch. n. 47; Walp. Ann. vi. p. 334.
MEXICO (*Paccard*).

106. **Epidendrum ochraceum,** Lindl. Bot. Reg. 1838, p. 14, t. 26; Lindl. Fol. Orch. n. 18; Walp. Ann. vi. p. 325; Refug. Bot. ii. t. 88; Rchb. f. Beitr. Orch. Centr.-Am. pp. 51 et 81.
Epidendrum triste, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 20; Lindl. Fol. n. 19.
SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), Sierra San Pedro Nolasco (*Jurgensen*, 601, 645), Orizaba (*Bourgeau*, 3013), valley of Cordova (*Bourgeau*, 1916); GUATEMALA, Alotenango (*Godman & Salvin*), without locality (*Skinner; Bernoulli*); COSTA RICA, Cartago (*Wendland*), Volcan de Irazu at 8000 feet (*Ærsted*). Hb. Kew.

107. **Epidendrum ærstedii,** Rchb. f. Bot. Zeit. 1852, p. 937, et Beitr. Orch. Centr.-Am. p. 52; Walp. Ann. vi. p. 348; Lindl. Fol. Orch. n. 309.
COSTA RICA, Cartago el Viejo (*Ærsted*).

108. **Epidendrum oncidioides,** Lindl. Bot. Reg. t. 1623, et Fol. Orch. n. 29; Walp. Ann. vi. p. 327.

Epidendrum graniticum, Lindl. in Hook. Journ. Bot. iii. p. 83.
Epidendrum affine, Focke in Bot. Zeit. 1853, p. 341.
Epidendrum spectabile, Focke in Bot. Zeit. 1853, p. 229.
Epidendrum guatemalense, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 249.
GUATEMALA.—GUIANA; BRAZIL.

109. **Epidendrum ovalifolium,** Lindl. Gen. & Sp. Orch. Pl. p. 104, et Fol. Orch. n. 207; Walp. Ann. vi. p. 386.
MEXICO (hb. *Pavon*). Hb. Kew.

110. **Epidendrum ovulum,** Lindl. Bot. Reg. 1843, Misc. p. 55, et Fol. Orch. n. 42; Walp. Ann. vi. p. 333.
SOUTH MEXICO, near Bolaños (*Loddiges* cult.). Hb. Kew.

111. **Epidendrum pallens,** Rchb. f. Beitr. Orch. Centr.-Am. p. 82.
COSTA RICA, Volcan de Barba at 9000 feet (*Wendland*).

112. **Epidendrum palpigerum,** Rchb. f. in Gard. Chron. n. s. xii. p. 40.
MEXICO, imported and cultivated by Mr. W. Bull of Chelsea.

113. **Epidendrum panthera,** Rchb. f. in Bonplandia, 1856, p. 326.
SOUTH MEXICO, Chiapas (*Linden*); GUATEMALA (*Skinner*). Hb. Kew.

114. **Epidendrum paranthicum,** Rchb. f. Bot. Zeit. 1852, p. 732, et Beitr. Orch. Centr.-Am. p. 37; Lindl. Fol. Orch. n. 214; Walp. Ann. vi. p. 387.
GUATEMALA (*Warscewicz*).

115. **Epidendrum parkinsonianum,** Hook. Bot. Mag. t. 3778; Rchb. f. in Gard. Chron. n. s. ix. p. 724; Lindl. Fol. Orch. n. 91, sub *E. falcato*; Rchb. f. Beitr. Orch. Centr.-Am. pp. 36 et 51, sub *E. falcato.*
Epidendrum aloifolium, Batem. Orch. Mex. & Guat. t. 25.
MEXICO (*Parkinson*). Hb. Kew.
There are probably other specimens in Kew herbarium belonging to this species, which Reichenbach states is distinct from *E. falcatum* with which Lindley had united it.

116. **Epidendrum pastoris,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 23; Lindl. Fol. Orch. n. 41; Walp. Ann. vi. p. 333.
SOUTH MEXICO, Mechoacan (*La Llave*).

117. **Epidendrum patens,** Swartz, Fl. Ind. Occ. p. 1495; Lindl. Fol. Orch. n. 235; Walp. Ann. vi. p. 384; Lodd. Bot. Cab. t. 1537; Bot. Mag. t. 3800.
GUATEMALA (*Skinner*).—JAMAICA; TRINIDAD. Hb. Kew.

118. **Epidendrum pentadactylum,** Rchb. f. in Bonplandia, 1854, p. 89; Walp. Ann. vi. p. 375, Beitr. Orch. Centr.-Am. p. 54, et Xenia Orch. i. t. 48.
COSTA RICA, Volcan de Irazu at 9000 feet (*Œrsted*).

119. **Epidendrum pergameneum,** Rchb. f. Beitr. Orch. Centr.-Am. p. 86.
Costa Rica, Desengaño (*Wendland*).

120. **Epidendrum phœniceum,** Lindl. Bot. Reg. 1841, Misc. p. 57, Sert. Orch. t. 46, et Fol. Orch. n. 78; Fl. des Serres, t. 306 (var. *vanillosmum*).
Epidendrum grahami, Hook. Bot. Mag. t. 3885.
Mexico (ex *Hooker*).—Cuba.

121. **Epidendrum phyllocharis,** Rchb. f. Xenia Orch. iii. p. 11, t. 208.
Costa Rica (*Endres*).

122. **Epidendrum phymatoglossum,** Rchb. f. in Bot. Zeit. 1852, p. 731, Xenia Orch. i. p. 164, t. 57, et in Walp. Ann. vi. p. 342.
Mexico (*Warscewicz*).

123. **Epidendrum physodes,** Rchb. f. in Gard. Chron. 1873, p. 289.
Costa Rica (*Zahn*).

124. **Epidendrum piliferum,** Rchb. f. in Linnæa, xli. p. 82.
Panama, Volcan de Chiriqui (*Warscewicz; Wallis; Zahn*).

125. **Epidendrum platystigma,** Rchb. f. Beitr. Orch. Centr.-Am. p. 82.
Costa Rica, San Miguel (*Wendland*).

126. **Epidendrum polyanthum,** Lindl. Gen. & Sp. Orch. Pl. p. 106, et Fol. Orch. n. 187 (excl. var. β); Batem. Orch. Mex. & Guat. t. 34; Refug. Bot. ii. t. 112.
Epidendrum bisetum, Lindl. Bot. Reg. 1841, Misc. p. 68.
Epidendrum funiferum, Morr. Ann. Gand, iv. p. 211, t. 198.
Epidendrum colorans, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1851, p. 250.
Epidendrum lansbergii, Regel, Cat. Hort. Petrop. 1855, p. 19?
South Mexico, Talea (*Hartweg*), Vera Cruz (*Galeotti*); Guatemala (*Bernoulli*).—Venezuela; Brazil. Hb. Kew.

127. **Epidendrum polybulbon,** Swartz, Fl. Ind. Occ. iii. p. 1491; Hook. Exot. Fl. t. 112; Bot. Mag. t. 4067.
Dinema polybulbon, Lindl. Gen. & Sp. Orch. pl. p. 111.
South Mexico, Mirador (*Sartorius*), Sierra San Pedro Nolasco (*Jurgensen*, 681), region of Orizaba (*Bourgeau*, 2470; *Bilimek*); Guatemala (*Skinner*). — Jamaica; Cuba. Hb. Kew.

128. **Epidendrum porpax,** Rchb. f. in Bonplandia, 1855, p. 220, Walp. Ann. vi. p. 368, et Beitr. Orch. Centr.-Am. p. 53.
Nicaragua, Segovia (*Œrsted*). Hb. Kew.

129. **Epidendrum porphyreum,** Lindl. in Hook. Journ. Bot. iii. p. 86, t. 7, et Fol. Orch. n. 177 ?

GUATEMALA (*Bernoulli*). Hb. Kew.

The type is from Peru.

130. **Epidendrum pratense,** Rchb. f. Beitr. Orch. Centr.-Am. p. 84.

GUATEMALA (*Wendland*).

131. **Epidendrum prismatocarpum,** Rchb. f. in Bot. Zeit. 1852, p. 729; Walp. Ann. vi. p. 322; Rchb. f. Beitr. Orch. Centr.-Am. p. 34; Bot. Mag. t. 5336; Warner, Sel. Orch. i. t. 9; Xenia Orch. ii. t. 129.

PANAMA, Volcan de Chiriqui at 5000 feet (*Warscewicz*). Hb. Kew.

132. **Epidendrum propinquum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 21; Walp. Ann. vi. p. 405; Lindl. Fol. Orch. n. 259.

SOUTH MEXICO, region of Orizaba at 7800 feet (*Liebmann*, 78; *Bilimek*, 427), without locality (*Galeotti*). Hb. Kew.

133. **Epidendrum pruinosum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 20; Walp. Ann. vi. p. 352; Lindl. Fol. Orch. n. 106.

MEXICO (*Galeotti*).

134. **Epidendrum pseudepidendrum,** Rchb. f. Xenia Orch. i. p. 160, t. 53, Walp. Ann. vi. p. 414, et Beitr. Orch. Centr.-Ann. p. 39.

Pseudepidendrum spectabile, Rchb. f. in Bot. Zeit. 1852, p. 733.

PANAMA, Volcan de Chiriqui at 4000 feet (*Warscewicz; Zahn*).

135. **Epidendrum pterocarpum,** Lindl. in Hook. Journ. Bot. iii. p. 82, et Fol. Orch. n. 22; Walp. Ann. vi. p. 326; Bot. Reg. 1841, t. 34.

Epidendrum cinnamomeum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 19.

SOUTH MEXICO, Oaxaca at 6000 to 7000 feet (*Galeotti*, 5100). Hb. Kew.

136. **Epidendrum radiatum,** Lindl. Bot. Reg. 1841, Misc. p. 58, et 1844, t. 45; Fol. Orch. n. 130; Walp. Ann. vi. p. 359.

Epidendrum marginatum, Kl. in Link, Kl. & Otto, Ic. Pl. Rar. Hort. Bot. Berol. p. 90, t. 36.

Epidendrum bracteolatum, Presl. Reliq. Hænk. i. p. 100?

SOUTH MEXICO, Hacienda de la Laguna (*Schiede*), Oaxaca and Vera Cruz (*Galeotti*, 5020, 5161), region of Orizaba (*Bourgeau*, 2473); GUATEMALA (*Skinner*). Hb. Kew.

137. **Epidendrum radicans,** Pav. in Lindl. Gen. & Sp. Orch. Pl. p. 104, et Fol. Orch. n 220; Walp. Ann. vi. p. 390; Rchb. f. Beitr. Orch. Centr.-Am. p. 54.

Epidendrum rhizophorum, Batem. in Bot. Reg. 1838, Misc. p. 8.

SOUTH MEXICO, between Tomatlan and Orizaba (*Liebmann*, 98), near Cordova (*Hahn*, 2303), near Comaltepec (*Hartweg*); GUATEMALA, Dueñas (*Godman & Salvin*), without

locality (*Bernoulli*, 244; *Skinner*); NICARAGUA, Realejo (*Sinclair*), summit of Volcan de Masaya (*Œrsted*); COSTA RICA, Cartago (*Wendland*). Hb. Kew.

138. **Epidendrum ramonense,** Rchb. f. Beitr. Orch. Centr.-Am. p. 81.
COSTA RICA, San Ramon (*Wendland*).

139. **Epidendrum ramosum,** Jacq. Sel. Stirp. Amer. p. 221, t. 132; Lindl. Gen. & Sp. Orch. p. 102, et Fol. Orch. n. 238; Walp. Ann. vi. p. 399.
Isochilus ramosum, Spreng. Syst. Veg. iii. p. 734.
Epidendrum rigidum, Lodd. Bot. Cab. t. 1600, non Jacquini.
SOUTH MEXICO, Mirador, Vera Cruz and Tonaguia, Oaxaca (*Liebmann*), Cordillera of Oaxaca, Pacific side, at 5000 feet (*Galeotti*, 5034).—CUBA and JAMAICA. Hb. Kew.

140. **Epidendrum raniferum,** Lindl. Gen. & Sp. Orch. p. 109, et Fol. Orch. n. 167; Walp. Ann. vi. p. 372; Bot. Reg. 1842, t. 42.
SOUTH MEXICO, region of Orizaba (*Hahn*), without locality (*Barber*). Hb. Kew.

141. **Epidendrum resectum,** Rchb. f. in Linnæa, xli. p. 82.
PANAMA, Volcan de Chiriqui (*Zahn*).

142. **Epidendrum rhynchophorum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 20; Lindl. Fol. Orch. n. 107; Walp. Ann. vi. p. 352.
SOUTH MEXICO, Vera Cruz at 4000 feet (*Galeotti*, 5077). Hb. Kew.

143. **Epidendrum rigidum,** Jacq. Sel. Stirp. Am. p. 222, t. 134; Lindl. Gen. & Sp. Orch. Pl. p. 110, et Fol. Orch. n. 239; Walp. Ann. vi. p. 400; Hook. Ic. Pl. t. 314.
SOUTH MEXICO, region of Orizaba (*Hahn*).—WEST INDIES; GUIANA; BRAZIL. Hb. Kew.

144. **Epidendrum scriptum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 22; Lindl. Fol. Orch. n. 264; Walp. Ann. vi. p. 407.
MEXICO (*Galeotti*).

145. **Epidendrum sculptum,** Rchb. f. in Bonplandia, 1854, p. 89.
PANAMA, Chagres (*Keferstein*).

146. **Epidendrum secundum,** Jacq. Sel. Stirp. Amer. p. 224, t. 137; Lindl. Gen. & Sp. Orch. p. 108.
Epidendrum elongatum, Jacq. Coll. iii. p. 260, et Ic. Pl. Rar. iii. t. 604; Lindl. Gen. & Sp. Orch. p. 107, et Fol. Orch. in 231; Walp. Ann. vi. p. 395; Bot. Mag. t. 611.
Amphiglottis secunda, Salisb. in Trans. Hort. Soc. Lond. i. p. 294.
SOUTH MEXICO, near Jalapa (*Leibold*).—VENEZUELA; WEST INDIES. Hb. Kew.

147. **Epidendrum selligerum,** Batem. in Bot. Reg. 1838, Misc. p. 40; Lindl. Fol. Orch. n. 26; Walp. Ann. vi. p. 327.

South Mexico, Oaxaca at 3000 feet (*Galeotti*, 5096, 5097); Guatemala (*Skinner*). Hb. Kew.

148. **Epidendrum seriatum,** Lindl. Fol. Orch. n. 183; Walp. Ann. vi. p. 347; Refug. Bot. ii. t. 90.

South Mexico, Zacuapan (*Leibold*), Mirador (*Linden*), Oaxaca, 5000 feet (*Galeotti*, 5233); Guatemala (*Skinner*). Hb. Kew.

149. **Epidendrum sisyrinchiifolium,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 19; Lindl. Fol. Orch. n. 70; Walp. Ann. vi. p. 341.

Mexico (*Galeotti*).

150. **Epidendrum skinneri,** Batem. in Bot. Reg. t. 1881; Bot. Mag. t. 3951; Lindl. Fol. Orch. n. 196; Walp. Ann. vi. p. 382; Rchb. f. Beitr. Orch. Centr.-Am. p. 37.

Epidendrum fuchsii, Regel in Schweiz. Zeitschr. Gartenb. 1851, p. 202.

Barkeria skinneri major, Paxt. Mag. Bot. xv. p. 1, cum ic. color.

South Mexico, Comitan (*Hartweg*); Guatemala, San Gerónimo, Alotenango, Dueñas, Acatenango (*Godman & Salvin*), without locality (*Skinner; Warscewicz*). Hb. Kew.

151. **Epidendrum spectabile,** Rchb. f. in Walp. Ann. vi. p. 375.

Barkeria spectabilis, Batem. in Bot. Reg. 1842, Misc. p. 43, et Orch. Mex. & Guat. t. 33; Bot. Mag. t. 4094.

South Mexico (*Karwinski*); Guatemala (*Skinner; Hartweg*). Hb. Kew.

152. **Epidendrum spondiadum,** Rchb. f. Bot. Zeit. 1852, p. 731, Walp. Ann. vi. p. 356, et Beitr. Orch. Centr.-Am. p. 36; Lindl. Fol. Orch. n. 119.

Costa Rica, growing on *Spondias* (*Warscewicz*). Hb. Kew.

153. **Epidendrum squalidum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 24; Lindl. Fol. Orch. n. 20; Walp. Ann. vi. p. 326.

South Mexico, mountains near Vallisoletum (*La Llave*).

154. **Epidendrum stamfordianum,** Batem. Orch. Mex. & Guat. t. 11; Lindl. Fol. Orch. n. 88; Walp. Ann. vi. p. 415; Rchb. f. Beitr. Orch. Centr.-Am. pp. 36, 52 et 103; Bot. Mag. t. 4759; Lem. Jard. Fleur. t. 251 (var. *pictum*).

Epidendrum basilare, Kl. in Link, Kl. & Otto, Ic. Pl. Rar. Hort. Berol. t. 45.

Epidendrum cycnostalix, Rchb. f. in Bot. Zeit. 1852, p. 731, et Beitr. Orch. Centr.-Am. p. 36.

South Mexico, Sierra San Pedro Nolasco (*Jurgensen*, 971); Guatemala (*Skinner*); Nicaragua, Volcan el Viejo (*Œrsted*); Costa Rica, Ojo de Agua (*Hoffmann*); Panama, Chiriqui (*Warscewicz*). Hb. Kew.

155. **Epidendrum stangeanum,** Rchb. f. in Gard. Chron. n. s. xv. p. 462.

Panama (*Stange*).

156. **Epidendrum stenopetalum,** Hook. Bot. Mag. t. 3410; Lindl. Fol. Orch. n. 247; Walp. Ann. vi. p. 402.

Epidendrum lamellatum, Lindl. Bot. Reg. Misc. p. 46.

Isochilus elegans, Focke, Tijdschr. Natuurk. Weten. iv. p. 68.

Honduras (*Sir C. Lemon*); Panama, Chagres (*Fendler*, 332).—Venezuela; Guiana; West Indies. Hb. Kew.

157. **Epidendrum strophinx,** Rchb. f. in Linnæa, xli. p. 78, et Refug. Bot. ii. sub tab. 139.

Guatemala.

158. **Epidendrum subaquilum,** Lindl. Bot. Reg. 1846, sub tab. 64, et Fol. Orch. n. 8; Walp. Ann. vi. p. 322.

Mexico or Guatemala (*Warner*). Hb. Kew.

159. **Epidendrum subulatifolium,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 21.

Mexico (*Galeotti*).

160. **Epidendrum teres,** Rchb. f. in Bonplandia, 1855, p. 220, Walp. Ann. vi. p. 398, et Beitr. Orch. Centr.-Am. p. 53.

South Mexico, Mirador (*Liebmann*); Nicaragua, Volcan el Viejo at 5500 feet (*Ærsted*); Costa Rica, Volcan de Irazu at 10,000 feet (*Ærsted*). Hb. Kew.

161. **Epidendrum tessellatum,** Batem. in Bot. Reg. 1838, Misc. p. 7; Lindl. Fol. Orch. n. 69; Walp. Ann. vi. p. 340; Bot. Mag. t. 3638; Rchb. f. Beitr. Orch. Centr.-Am. pp. 34 et 51.

Epidendrum lividum, Lindl. Bot. Reg. 1838, Misc. p. 51.

Epidendrum articulatum, Kl. in Otto & Dietr. Allg. Gart. 1838, p. 297.

South Mexico, Oaxaca 3000 to 5000 feet (*Galeotti*, 5320); Guatemala (*Skinner*); Costa Rica, Acapillita (*Ærsted*); Panama, Chiriqui (*Warscewicz*). Hb. Kew.

162. **Epidendrum tetraceros,** Rchb. f. Bot. Zeit. 1852, p. 733; Walp. Ann. vi. p. 403, et Beitr. Orch. Centr.-Am. p. 39; Lindl. Fol. Orch. n. 251.

Panama, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

163. **Epidendrum trachycarpum,** Lindl. in Benth. Bot. Voy. 'Sulphur,' p. 172, et Fol. Orch. n. 66; Walp. Ann. vi. p. 340.

South Mexico, Manzanilla Bay (*Hinds*). Hb. Kew.

164. **Epidendrum trachychilum,** Lindl. Fol. Orch. n. 57; Walp. Ann. vi. p. 338.

Epidendrum alatum, Lindl. in Benth. Pl. Hartw. p. 92.

Guatemala, Cumbre de Chuacus (*Hartweg*). Hb. Kew.

165. **Epidendrum tripunctatum,** Lindl. Bot. Reg. 1841, Misc. p. 66, et Fol. Orch. n. 12, nec n. 126; Rchb. f. in Gard. Chron. n. s. xvi. p. 38.

MEXICO (*Harrison*).

166. **Epidendrum? turbinatum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 41; Lindl. Fol. Orch. n. 300; Walp. Ann. vi. p. 417.

MEXICO (*La Llave*).

A very doubtful species.

167. **Epidendrum turialvæ,** Rchb. in Gard. Chron. 1871, p. 1678.

Epidendrum, n. sp. ?, Rchb. f. Beitr. Orch. Centr.-Am. p. 85.

COSTA RICA, Volcan de Turrialba (*Wendland*).

168. **Epidendrum vandifolium,** Lindl. in Journ. Hort. Soc. Lond. iv. p. 269, et Fol. Orch. n. 211; Walp. Ann. vi. p. 387.

MEXICO, imported and cultivated by Messrs. Loddiges.

169. **Epidendrum varicosum,** Batem. in Bot. Reg. 1838, Misc. p. 30; Lindl. Fol. Orch. n. 71; Walp. Ann. vi. p. 341, pro parte; Rchb. f. Beitr. Orch. Centr.-Am. p. 80, et Xenia Orch. i. p. 163, t. 56.

Epidendrum leiobulbon, Hook. Journ. Bot. iii. p. 308, t. 10.

Epidendrum quadratum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1850, p. 402.

SOUTH MEXICO, Hacienda del Carmen (*Hartweg*), Sierra San Pedro Nolasco (*Jurgensen,* 832); GUATEMALA, Las Nabes (*Wendland*), above Calderas (*Godman & Salvin*), without locality (*Skinner*); COSTA RICA (*Warscewicz*); PANAMA, Veraguas (*Warscewicz*). Hb. Kew.

170. **Epidendrum venosum,** Lindl. Gen. & Sp. Orch. Pl. p. 99, et Fol. Orch. n. 104; Walp. Ann. vi. p. 351.

Epidendrum ensicaulon, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 19.

SOUTH MEXICO, near Morelia (*Hartweg*). Hb. Kew.

171. **Epidendrum vieji,** Rchb. f. Bonplandia, 1855, p. 220, Xenia Orch. i. p. 139, t. 48, Beitr. Orch. Centr.-Am. p. 53; Walp. Ann. vi. p. 381.

GUATEMALA (*Skinner*); NICARAGUA, Volcan el Viejo (*Œrsted*). Hb. Kew.

172. **Epidendrum virens,** Lindl. in Lindl. & Paxt. Fl. Gard. i. sub t. 30, et Fol. Orch. n. 54; Walp. Ann. vi. p. 337.

Epidendrum wageneri, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1851, p. 250.

Epidendrum ochranthum, A. Rich. in Ram. de la Sagra, Fl. Cub. t. 78.

GUATEMALA (*Skinner*).—CUBA; VENEZUELA. Hb. Kew.

173. **Epidendrum virgatum,** Lindl. in Hook. Journ. Bot. iii. p. 83, et Fol. Orch. n. 38; Walp. Ann. vi. p. 332.

SOUTH MEXICO, Oaxaca (*Karwinski; Galeotti,* 5080); GUATEMALA, in the mountains of Coban &c. (*Hartweg*). Hb. Kew.

174. **Epidendrum vitellinum,** Lindl. Gen. & Sp. Orch. Pl. p. 97, Fol. Orch. n. 4, et Sert. Orch. t. 45; Bot. Reg. 1840, t. 35; Bot. Mag. t. 4107; Fl. des Serres, t. 1026; Rchb. f. Beitr. Orch. Centr.-Am. p. 34.

South Mexico, Oaxaca at 5000 to 6000 feet (*Galeotti*, 5104), summit of Totontepec (*Hartweg*), Jalapa (*Coulter*, 1532); Guatemala, above San Gerónimo (*Godman & Salvin; Warscewicz*). Hb. Kew.

175. **Epidendrum volutum,** Lindl. in Lindl. & Paxt. Fl. Gard. ii. p. 151, fig. 215, et Fol. Orch. n. 114; Walp. Ann. vi. p. 354.

Central America (*Skinner*). Hb. Kew.

176. **Epidendrum warscewiczii,** Rchb. f. in Bot. Zeit. 1852, p. 732, Xenia Orch. i. p. 69, t. 26, et Beitr. Orch. Centr.-Am. p. 38.

Costa Rica (*Warscewicz*); Panama, Veraguas (*Warscewicz*).

177. **Epidendrum,** sp. (aff. *E. piperino*).

South Mexico, region of Orizaba (*Bourgeau*, 3104). Hb. Kew.

Typical *E. piperinum*, Lindl. Fol. Orch. n. 245, is a native of Peru.

178. **Epidendrum (Barkeria),** sp.

Guatemala, Dueñas (*Godman & Salvin*, 47). Hb. Kew.

179. **Epidendrum,** sp.

Guatemala, Ysabal (*Godman & Salvin*, 100). Hb. Kew.

180. **Epidendrum,** sp.

South Mexico, region of Orizaba (*Bourgeau*, 3010). Hb. Kew.

181. **Epidendrum,** sp.

Guatemala, Volcan de Fuego (*Godman & Salvin*). Hb. Kew.

182. **Epidendrum,** sp.

Guatemala, Dueñas (*Godman & Salvin*, 101). Hb. Kew.

33. CATTLEYA.

Cattleya, Lindl. Collect. Bot. t. 33 & 37, et Gen. & Sp. Orch. Pl. p. 116; Benth. et Hook. Gen. Plant. iii. p. 531.

A Tropical-American genus of about twenty species, ranging from Mexico and the West Indies to Brazil.

1. **Cattleya citrina,** Lindl. Bot. Reg. xxx. sub t. 5, et Gen. & Sp. Orch. Pl. p. 117; Bot. Mag. t. 3742; Regel, Gartenflora, t. 931.

Cattleya karwinskii, Mart. Ausw. merkw. Pfl. p. 14, t. 10.

Epidendrum citrinum, Rchb. f. Xenia Orch. ii. p. 31, et in Walp. Ann. vi. p. 317.

Sobralia citrina, Llav. et Lex. Nov. Veg. Descr., Orch. Opusc. p. 21.

South Mexico, **Orizaba** (*Müller*), region of Oaxaca, 7000 to 10,000 feet (*Galeotti*,

5102; *Hartweg; Karwinski*); Mechoacan (*Ghiesbreght*), Valladolid, Morelia (*La Llave*). Hb. Kew.

2. **Cattleya dowiana,** Batem. in Gard. Chron. 1866, p. 922; Bot. Mag. t. 5618; Warner, Sel. Orch. ii. t. 27; Rev. Hort. 1869, p. 30; Ill. Hort. t. 525.

Costa Rica (*Warscewicz; Arce*). Hb Kew.

3. **Cattleya granulosa,** Lindl. Bot. Reg. 1842, t. 1; Bot. Mag. t. 5048.

Epidendrum granulosum, Rchb. f. Xenia Orch. ii. p. 33, et in Walp. Ann. vi. p. 319.

Guatemala (*Skinner; Hartweg*). Hb. Kew.

4. **Cattleya labiata,** Lindl. Collect. Bot. t. 33; Hook. Exot. Fl. t. 157; Bot. Mag. t. 3998.

Epidendrum labiatum, Rchb. f. Xenia Orch. ii. p. 29, in Walp. Ann. vi. p. 313, et Beitr. Orch. Centr.-Am. p. 51.

Cattleya mossiæ, Hook. Bot. Mag. t. 3669; Bot. Reg. 1840, t. 58; Warner, Sel. Orch. iii. t. 16 (varietates).

Cattleya lemoniana, Lindl. Bot. Reg. 1846, t. 35.

Cattleya warscewiczii, Rchb. f. in Bonplandia, 1854, p. 112; Xenia Orch. i. p. 78, t. 31.

Cattleya wageneri, Rchb. f. in Bonplandia, 1854, p. 21; Xenia Orch. i. p. 28, t. 13.

Cattleya lüddemanniana, Rchb. f. Xenia Orch. i. p. 29.

Cattleya pallida, Lindl. in Lindl. & Paxt. Fl. Gard. ii. t. 48.

Cattleya trianæi, Linden et Rchb. f. in Bot. Zeit. 1860, p. 74.

South Mexico, Tepic (*Hartweg*); Costa Rica, Turrialba (*Œrsted*).—Venezuela to Brazil. Hb. Kew.

5. **Cattleya skinneri,** Batem. Orch. Mex. & Guat. t. 13; Bot. Reg. xxx. sub t. 5; Bot. Mag. t. 4270, et t. 4916 (var. *parviflora*); Paxt. Mag. Bot. xi. p. 193, cum ic. color.

Cattleya deckeri, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1855, p. 81.

Epidendrum hügelianum, Rchb. f. Xenia Orch. ii. p. 29; Walp. Ann. vi. p. 312, et Beitr. Orch. Centr.-Am. pp. 32 et 51.

South Mexico, Cordillera of Vera Cruz, at 2000 feet (*Galeotti*, 5118); Guatemala (*Skinner; Bernoulli*), common in the Costa Grande to 2000 feet Escuintla, Cuyotenango, Masatenango, &c. (*Godman & Salvin*); Nicaragua, near Segovia (*Œrsted*); Costa Rica (*Warscewicz*). Hb. Kew.

34. BRASSAVOLA.

Brassavola, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 216; Benth. et Hook. Gen. Plant. iii. p. 533.

A Tropical-American genus of about twenty species, extending from Mexico and the West Indies to Brazil.

1. **Brassavola acaulis,** Lindl. in Lindl. & Paxt. Fl. Gard. ii. p. 152, fig. 216.

Bletia acaulis, Rchb. f. in Walp. Ann. vi. p. 435; Xenia Orch. ii. p. 64, et Beitr. Orch. Centr.-Am. p. 41.

Central America (*Skinner; Warscewicz*). Hb. Kew.

2. **Brassavola cucullata,** R. Br. in Ait. Hort. Kew. ed. 2, p. 216; Journ. Hort. Soc. Lond. v. p. 85, cum ic. xylogr.; Griseb. Fl. Brit. W. Ind. p. 620.

Epidendrum cucullatum, L. Sp. Pl. ed. 2, p. 1350; Bot. Mag. t. 543.

Brassavola cuspidata, Hook. Bot. Mag. t. 3722.

Brassavola odoratissima, Regel, Gartenflora, t. 33.

Brassavola appendiculata, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 23.

Bletia cucullata, Rchb. f. in Walp. Ann. vi. p. 433; Xenia Orch. ii. p. 66.

South Mexico, Oaxaca, 2500 to 4000 feet (*Galeotti,* 5089).—West Indies; Venezuela. Hb. Kew.

3. **Brassavola lineata,** Hook. Bot. Mag. t. 4734.

Brassavola matthieuana, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1853, p. 290.

Bletia lineata, Rchb. f. in Walp. Ann. vi. p. 436; Xenia Orch. ii. p. 64, et Beitr. Orch. Centr.-Am. p. 40.

Costa Rica, at 1000 to 2000 feet (*Warscewicz*). Hb. Kew.

4. **Brassavola nodosa,** Lindl. Bot. Reg. t. 1465, et Gen. & Sp. Orch. Pl. p. 114; Bot. Mag. t. 3229; Griseb. Fl. Brit. W. Ind. p. 621.

Epidendrum nodosum, Jacq. Sel. Stirp. Am. p. 226, t. 140.

Bletia nodosa, Rchb. f. in Walp. Ann. vi. p. 437, Xenia Orch. ii. p. 65.

Brassavola cordata, Lindl. Bot. Reg. t. 1913, in textu 1914.

Bletia cordata, Rchb. f. in Walp. Ann. vi. p. 436.

Brassavola grandiflora, Lindl. Bot. Reg. 1839, Misc. p. 16.

Guatemala (*Skinner*); Honduras (*Strangways*); Nicaragua (*Wright*); Panama, Chagres (*Fendler,* 437).—North part of South America and West Indies, common. Hb. Kew.

5. **Brassavola pumilio,** Rchb. f. in Linnæa, xviii. p. 418.

Bletia pumilio, Rchb. f. in Walp. Ann. vi. p. 433, et Xenia Orch. ii. p. 62.

South Mexico, Zacuapan (*Leibold*), without locality (*Schaffner*). Hb. Kew.

6. **Brassavola rhopalorrhachis,** Rchb. f. in Bot. Zeit. 1852, p. 855.

Bletia rhopalorrhachis, Rchb. f. in Walp. Ann. vi. p. 437; Xenia Orch. ii. p. 65, et Beitr. Orch. Centr.-Am. p. 55.

Guatemala (*Friedrichsthal*); Costa Rica, Guanacaste (*Œrsted*).

7. **Brassavola venosa,** Lindl. Bot. Reg. 1840, Misc. p. 20, t. 39; Bot. Mag. t. 4021.

Bletia venosa, Rchb. f. in Walp. Ann. vi. p. 438, et Xenia Orch. ii. p. 65.

Guatemala (*Godman & Salvin; Hartweg*); Honduras (ex *Loddiges*). Hb. Kew.

8. **Brassavola,** sp.

Panama, Paraiso (*S. Hayes,* 109). Hb. Kew.

35. LÆLIA.

Lælia, Lindl. Gen. & Sp. Orch. Pl. p. 115, et Bot. Reg. 1842, sub t. 62; Benth. et Hook. Gen. Plant. iii. p. 533.

A Tropical-American genus of about twenty species, ranging from Mexico to Brazil.

1. **Lælia acuminata,** Lindl. 1841, Misc. p. 17, t. 24, et 1842, sub t. 62; Bot. Mag. t. 4905.

Bletia acuminata, Rchb. f. in Walp. Ann. vi. p. 427, et Xenia Orch. ii. p. 55.

GUATEMALA, Retaleuleu (*Hartweg*); COSTA RICA (ex *Loddiges*). Hb. Kew.

2. **Lælia albida,** Batem. in Bot. Reg. 1839, Misc. p. 2, t. 54; Bot. Mag. t. 3957.

Bletia albida, Rchb. f. in Walp. Ann. vi. p. 428, et Xenia Orch. ii. p. 57.

Lælia discolor, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 23.

SOUTH MEXICO, Cordillera of Oaxaca, at 7500 feet (*Galeotti*, 5017), without altitude (*Karwinski*). Hb. Kew.

3. **Lælia anceps,** Lindl. Bot. Reg. t. 1751, et 1842, sub t. 62; Bot. Mag. t. 3804; Bot. Reg t. 1947 (var. *barkeriana*).

Bletia anceps, Rchb. f. in Walp. Ann. vi. p. 418, et Xenia Orch. ii. p. 47.

SOUTH MEXICO, Zimapan (*Coulter*, 153), Mirador (*Liebmann*), region of Orizaba (*Bourgeau*, 3355), without locality (*Parkinson*). Hb. Kew.

4. **Lælia autumnalis,** Lindl. Bot. Reg. 1839, t. 27, et 1842, sub t. 62; Bot. Mag. t. 3817; Batem. Orch. Mex. & Guat. t. 9.

Bletia autumnalis, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 17; Walp. Ann. vi. p. 427; Rchb. f. Xenia Orch. ii. p. 56.

SOUTH MEXICO, Morelia (*La Llave*), Oaxaca (*Karwinski*), without locality (*Bates*). Hb. Kew.

5. **Lælia digbyana,** Benth. MSS. in Herb. Kew.

Brassavola digbyana, Lindl. Bot. Reg. 1846, t. 53; Bot. Mag. t. 4474.

Bletia digbyana, Rchb. f. in Walp. Ann. vi. p. 422.

HONDURAS (*Mrs. MacDonald*). Hb. Kew.

[*Lælia flava,* Lindl. Bot. Reg. 1839, Misc. p. 88, et 1842, t. 62, syn. *Bletia flava,* Rchb. f. in Walp. Ann. vi. p. 431, is not a native of Mexico.]

6. **Lælia furfuracea,** Lindl. Bot. Reg. 1839, t. 26, et 1842, sub t. 62; Bot. Mag. t. 3810.

Bletia furfuracea, Rchb. f. in Walp. Ann. vi. p. 428, et Xenia Orch. ii. p. 56.

SOUTH MEXICO, Bolaños (*Hartweg*), Oaxaca 7500 to 8500 (*Galeotti*, 5006; *Karwinski*), without locality (*Parkinson*). Hb. Kew.

7. **Lælia glauca,** Benth. MSS. in Herb. Kew.

Brassavola glauca, Lindl. Bot. Reg. 1839, Misc. p. 47, et 1840, t. 44; Batem. Orch. Mex. & Guat. t. 16; Bot. Mag. t. 4033.

Bletia glauca, Rchb. f. in Walp. Ann. vi. p. 422, et Beitr. Orch. Centr.-Am. p. 88.

SOUTH MEXICO, Jalapa (*Henchman*), Vera Cruz (*Hartweg*); GUATEMALA (*Bernoulli*, 301; *Skinner*). Hb. Kew.

8. **Lælia majalis,** Lindl. Bot. Reg. 1839, Misc. p. 35, 1842, sub t. 62, et 1844, t. 30; Batem. Orch. Mex. & Guat. t. 23; Bot. Mag. t. 5667; Paxt. Mag. Bot. xii. p. 1, cum ic. color.

Bletia speciosa, H. B. K. Nov. Gen. et Sp. i. p. 342; Walp. Ann. vi. p. 428.

Cattleya grahami, Lindl. Gen. & Sp. Orch. Pl. p. 116.

Bletia grandiflora, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 17; Rchb. f. Xenia Orch. ii. p. 55.

South Mexico, San Bartolo &c. at 8000 feet (*Schiede; Hartweg*). Hb. Kew.

9. **Lælia peduncularis,** Lindl. Bot. Reg. 1842, Misc. p. 9, et sub t. 62; 1845, t. 69.

Bletia peduncularis, Rchb. f. in Walp. Ann. vi. p. 426, et Xenia Orch. ii. p. 54.

Mexico (ex *Lindley*); Guatemala (*Skinner*). Hb. Kew.

10. **Lælia rubescens,** Lindl. Bot. Reg. 1840, Misc. p. 20, t. 41, et 1842, sub t. 42.

Bletia rubescens, Rchb. f. in Walp. Ann. vi. p. 425; Xenia Orch. ii. p. 53.

Mexico ?, Nicaragua, summit of Volcan el Viejo (*Ærsted*). Hb. Kew.

11. **Lælia superbiens,** Lindl. Bot. Reg. 1840, Misc. p. 46; Batem. Orch. Mex. & Guat. t. 38; Bot. Mag. t. 4090.

Guatemala, Barrancas of Sachmarachon, near Comalapa (*Skinner*), near Copan (*Godman & Salvin*), Quesaltenango (*Hartweg*). Hb. Kew.

12. **Lælia violacea,** Rchb. f. in Bonplandia, 1854, p. 89.

Bletia violacea, Rchb. f. in Walp. Ann. vi. p. 426, et Beitr. Orch. Centr.-Am. p. 55.

South Mexico, Cordillera of Oaxaca (*Galeotti*); Nicaragua, Masaya (*Ærsted*).

13. **Lælia wendlandi,** Rchb. f. in Walp. Ann. vi. p. 431.

Bletia wendlandi, Rchb. f. Xenia Orch. ii. p. 58, et Beitr. Orch. Centr.-Am. p. 87.

Guatemala (*Wendland*).

36. SCHOMBURGKIA.

Schomburgkia, Lindl. Sert. Orch. t. 10 et 13; Benth. et Hook. Gen. Plant. iii. p. 534.

About twelve species restricted to Tropical America.

1. **Schomburgkia galeottiana,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 23; Benth. et Hook. Gen. Pl. iii. p. 534.

Schomburgkia tibicinis, var. *grandiflora,* Bot. Mag. t. 4476.

South Mexico, Oaxaca (*Galeotti*). Hb. Kew.

2. **Schomburgkia tibicinis,** Batem. in Bot. Reg. 1838, p. 8, et Orch. Mex. & Guat. t. 30; Bot. Reg. 1845, t. 30.

Bletia tibicinis, Rchb. f. in Walp. Ann. vi. p. 429, Xenia Orch. ii. p. 58, et Beitr. Orch. Centr.-Am. pp. 40 et 51.

Guatemala, without locality (*Skinner*), Rio de Mico (*Friedrichsthal*), near Peten

(*Salvin*); NICARAGUA, Pearlkey Lagoon, Mosquito Coast (*Wullschlägel*); COSTA RICA, Sapoa (*Œrsted*). Hb. Kew.

Tribe II. VANDEÆ.

37. EULOPHIA.

Eulophia, R. Br. in Bot. Reg. t. 686; Benth. et Hook. Gen. Plant. iii. p. 535.

A genus of about fifty species, chiefly in the Old World, and in Tropical and South Africa; a few in Tropical Asia; two in Australia; and one in Brazil. We find no allusion to the Mexican species in Bentham and Hooker's 'Genera Plantarum.'

1. **Eulophia filicaulis,** Lindl. in Ann. Nat. Hist. x. p. 184; Walp. Ann. vi. p. 646.
MEXICO (*Karwinski*).

38. GALEANDRA.

Galeandra, Lindl. in Bauer, Ill. Gen. Orch. t. 8; Benth. et Hook. Gen. Plant. iii. p. 536.

Restricted to Tropical America, where there are about six species, ranging from Mexico to Brazil.

1. **Galeandra baueri,** Lindl. Gen. & Sp. Orch. Pl. p. 187, et Bot. Reg. 1840, t. 49; Batem. Orch. Mex. & Guat. t. 19 (ic. tamen ex adnot. in herb. Lindl. e plantis 2 diversis composita); Walp. Ann. vi. p. 649.

SOUTH MEXICO, San Pedro Nolasco &c. (*Jurgensen*), Kisatipa, ten leagues from Melacatepec (*Ross*), without locality (*Hartweg*); GUATEMALA (*Skinner*).—COLOMBIA; GUIANA. Hb. Kew.

39. POLYSTACHYA.

Polystachya, Hook. Exot. Fl. t. 103; Benth. et Hook. Gen. Plant. iii. p. 540.

About forty species, mostly in Tropical and South Africa; a few in India and the Malayan Peninsula, and the rest in America.

1. **Polystachya cerea,** Lindl. Bot. Reg. 1840, Misc. p. 86; Walp. Ann. vi. p. 641.

SOUTH MEXICO, Cordillera of Oaxaca, 5000 to 7500 feet (*Galeotti,* 5048). Hb. Kew.

2. **Polystachya clavata,** Lindl. Bot. Reg. 1842, Misc. p. 61; Walp. Ann. vi. p. 642.

BRITISH HONDURAS, Belize (*Loddiges* cult.). Hb. Kew.

3. **Polystachya lineata,** Rchb. f. in Refug. Bot. ii. tt. 80 et 81 (var. *elatior*).
SOUTH MEXICO and GUATEMALA (*Saunders* cult.).

4. **Polystachya luteola,** Hook. Exot. Fl. t. 103; Walp. Ann. vi. p. 639; Griseb. Fl. Brit. W. Ind. p. 628.

Dendrobium polystachyon, Lindl. Collect. Bot. t. 20.

Guatemala, Ysabal (*Godman & Salvin*), Chojoja, near Mazatenango (*Bernoulli*).—Venezuela; Guiana; West Indies, common. Hb. Kew.

This is so like *P. zeylanica*, Lindl., as to be scarcely distinguishable.

5. **Polystachya masayensis,** Rchb. f. in Bonplandia, 1855, p. 217; Walp. Ann. vi. p. 642, et Beitr. Orch. Centr.-Am. p. 50 (*varietates*).

Nicaragua, summit of Masaya (*Œrsted*). Hb. Kew.

40. CYRTOPODIUM.

Cyrtopodium, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 216; Benth. & Hook. Gen. Plant. iii. p. 541.

Of this genus upwards of twenty species are known, and they are widely dispersed in Tropical Asia, Africa, Madagascar, and America.

1. **Cyrtopodium punctatum,** Lindl. Gen. & Sp. Orch. Pl. p. 188; Rchb. f. in Linnæa, xviii. p. 404; Walp. Ann. vi. p. 666; Bot. Mag. t. 3507.

Epidendrum punctatum, L. Sp. Pl. ed. 2, p. 1349.

South Mexico, Jalapa (*Leibold*), Malpays de Naulingo (*Schiede*).—Colombia to Guiana and Brazil, and in the West Indies. Hb. Kew.

2. **Cyrtopodium woodfordii,** Sims, Bot. Mag. t. 1814; Bot. Reg. t. 1508.

Cyrtopera woodfordii, Lindl. Gen. et Sp. Orch. Pl. p. 189.

Cyrtopera longifolia, Rchb. f. in Walp. Ann. vi. p. 668, et in Bot. Zeit. 1852, p. 734 (var.? *pachystelidia*).

Panama, Volcan de Chiriqui (*Warscewicz*).—Venezuela; Guiana; Brazil; West Indies.

41. GOVENIA.

Govenia, Lindl. in Lodd. Bot. Cab. t. 1709, et Gen. & Sp. Orch. Pl. p. 161; Benth. et Hook. Gen. Plant. iii. p. 542.

A Tropical-American genus of about a dozen species, ranging from Mexico and the West Indies to Brazil.

1. **Govenia alba,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 25.

Mexico (*Galeotti*).

2. **Govenia andrieuxii,** Rchb. f. in Bot. Zeit. 1852, p. 835, et Walp. Ann. vi. p. 558.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 864); South Mexico, San Felipe (*Andrieux*, 88), without locality (*Schaffner*). Hb. Kew.

3. **Govenia brevilabris,** Rchb. f. in Walp. Ann. vi. p. 619.

Eucnemis brevilabris, Lindl. Gen. & Sp. Orch. Pl. p. 161.

South Mexico, Chiapas (*Ghiesbreght*, 774), without locality (hb. *Pavon*). Hb. Kew.

4. **Govenia capitata,** Lindl. Bot. Reg. sub t. 1795; Walp. Ann. vi. p. 557; Benth. Pl. Hart. p. 72.

South Mexico, Rancho del Ojo de Agua (*Hartweg*), Atotonilco el Chico (*Karwinski*). Hb. Kew.

5. **Govenia deliciosa,** Rchb. f. in Bot. Zeit. 1852, p. 836, et Walp. Ann. vi. p. 557.

South Mexico, Mirador (*Heller*), without locality (*Schiede*).

[*Govenia fasciata*, Lindl. Bot. Reg. 1843, Misc. p. 70, originally reported from Mexico, is a native of Colombia and Peru, and not of the first country.]

6. **Govenia liliacea,** Lindl. Bot. Reg. 1836, sub t. 1795, et 1838, t. 13; Walp. Ann. vi. p. 556.

Maxillaria liliacea, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 12.

South Mexico, Valladolid (*La Llave*), region of Orizaba (*Bourgeau*, 2954), Cordillera of Oaxaca, 7500 to 8500 feet (*Galeotti*, 5083); Guatemala, barrancas on the Cuesta of Mixco (*Skinner*), without locality (*Bernoulli; Hartweg*). Hb. Kew.

7. **Govenia mutica,** Rchb. f. in Bot. Zeit. 1852, p. 856, Walp. Ann. vi. p. 556, et Xenia Orch. iii. p. 46, t. 220.

South Mexico, Zacuapan (*Leibold*), Cordova (*Höge*).

8. **Govenia pauciflora,** Lindl. in Ann. Nat. Hist. x. p. 184; Walp. Ann. vi. p. 556.

South Mexico, near Jesus del Monte (*Karwinski*), without locality (*Schaffner*). Hb. Kew.

9. **Govenia quadriplicata,** Rchb. f. Beitr. Orch. Centr.-Am. p. 75.

Costa Rica, Volcan de Irazu (*Wendland*).

10. **Govenia superba,** Lindl. in Lodd. Bot. Cab. t. 1709, et Bot. Reg. t. 1795; Gen. & Sp. Orch. Pl. p. 153; Walp. Ann. vi. p. 558.

Maxillaria superba, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 13.

South Mexico, Cordillera of Oaxaca (*Galeotti*, 5084), near Valladolid (*La Llave*). Hb. Kew.

In Kew herbarium there are specimens of what appears to be the same species from Jalapa (*Linden*), Zimapan (*Coulter*), and Guatemala (*Bernoulli*).

11. **Govenia utriculata,** Lindl. Bot. Reg. 1839, Misc. p. 46; Griseb. Fl. Brit. W. Ind. p. 628.

Govenia lagenophora, Lindl. *l. c.*; Rchb. f. in Walp. Ann. vi. p. 556.

Cymbidium utriculatum, Swartz, Fl. Ind. Occ. p. 1477.

South Mexico, Orizaba (*Müller*, 167).—Cuba; Jamaica. Hb. Kew.

12. **Govenia,** sp. ?

South Mexico, Jesus del Monte, 7000 to 8000 feet (*Galeotti*, 5203). Hb. Kew.

42. ZYGOPETALUM.

Zygopetalum, Hook. Bot. Mag. t. 2748; Benth. et Hook. Gen. Plant. iii. p. 542.

An exclusively Tropical-American genus of about forty species, extending from Costa Rica and the West Indies to Brazil.

1. **Zygopetalum aromaticum,** Rchb. f. in Bot. Zeit. 1852, p. 668, et Beitr. Orch. Centr.-Am. p. 27.

Warscewiczella aromatica, Rchb. f. in Walp. Ann. vi. p. 654.

Panama, Volcan de Chiriqui (*Warscewicz*).

2. **Zygopetalum (Warscewiczella) bidentatum,** Rchb. f. MSS. in herb. Kew.

South Mexico, Chiapas (*Ghiesbreght*, 772). Hb. Kew.

3. **Zygopetalum burtii,** Benth. et Hook. Gen. Plant. iii. p. 543.

Batemania burtii, Rchb. f. et Endres in Gard. Chron. 1872, p. 1099; Bot. Mag. t. 6003.

Costa Rica (*Endres*).—Colombia.

4. **Zygopetalum cerinum,** Rchb. f. in Walp. Ann. vi. p. 651, et Beitr. Orch. Centr.-Am. p. 26.

Huntleya cerina, Lindl. in Lindl. & Paxt. Fl. Gard. iii. p. 62, fig. 263.

Pescatoria cerina, Rchb. f. Xenia Orch. i. p. 184, t. 65.

Panama, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

5. **Zygopetalum discolor,** Rchb. f. in Walp. Ann. vi. p. 654, et Beitr. Orch. Centr.-Am. pp. 27, 48 et 75.

Warscewiczella discolor, Rchb. f. in Bot. Zeit. 1852, p. 636.

Warrea discolor, Lindl. in Journ. Hort. Soc. Lond. iv. p. 265; Bot. Mag. t. 4830.

Costa Rica, between Cartago and Naranjo (*Œrsted; Warscewicz; Wendland*). Hb. Kew.

6. **Zygopetalum grandiflorum,** Benth. et Hook. Gen. Plant. iii. p. 543.

Batemania grandiflora, Rchb. f. in Bonplandia, 1856, p. 323.

Galeottia grandiflora, A. Rich. in Ann. Sc. Nat. série 3, iii. p. 25.

Mexico (*Galeotti*).

7. **Zygopetalum (Kefersteinia) lacteum,** Rchb. f. in Gard. Chron. 1872, p. 1290.

Panama, Volcan de Chiriqui (*Wallis; Endres*).

8. **Zygopetalum marginatum,** Rchb. f. in Walp. Ann. vi. p. 654.

Warscewiczella marginata, Rchb. f. in Bot. Zeit. 1852, p. 636, et Xenia Orch. i. p. 61, t. 23.

Warrea marginata, Rchb. f. in Bot. Zeit. 1854, p. 636.

Warrea (Warscewiczella) quadrata, Lindl. in Gard. Chron. 1853, p. 647; Bot. Mag. t. 4766.

Central America (*Warscewicz*). Hb. Kew.

9. **Zygopetalum moritzii,** Rchb. f. in Walp. Ann. vi. p. 658.

Kefersteinia stapelioides, Rchb. f. in Bot. Zeit. 1852, p. 634, et Xenia Orch. i. p. 69, t. 25.

CENTRAL AMERICA (ex *Reichenbach*).—VENEZUELA.

10. **Zygopetalum wendlandi,** Rchb. f. Beitr. Orch. Centr.-Am. p. 74.

COSTA RICA, at the foot of the Volcan de Irazu (*Wendland*).

43. LYCOMORMIUM.

Lycomormium, Rchb. f. in Bot. Zeit. 1852, p. 833; Walp. Ann. vi. p. 611; Benth. et Hook. Gen. Plant. iii. p. 545.

Two or three species inhabiting Colombia and Central America.

1. **Lycomormium cerinum,** Benth. in Journ. Linn. Soc. Lond. xviii. p. 321.

Peristeria cerina, Lindl. Bot. Reg. t. 1953; Walp. Ann. vi. p. 607.

CENTRAL AMERICA (*Knight*). Hb. Kew.

44. XYLOBIUM.

Xylobium, Lindl. Bot. Reg. sub t. 897, Benth. et Hook. Gen. Plant. iii. p. 547.

A Tropical-American genus, of which sixteen species are known.

1. **Xylobium brachypus,** Hemsley.

Maxillaria brachypus, Rchb. f. Bot. Zeit. 1852, p. 734, Walp. Ann. vi. p. 507, et Beitr. Orch. Centr.-Am. p. 30.

NICARAGUA, San Juan (*Warscewicz*). Hb. Kew.

2. **Xylobium concavum,** Hemsley.

Maxillaria concava, Lindl. Bot. Reg. 1844, Misc. p. 4; Walp. Ann. vi. p. 511; Lindl. & Paxt. Fl. Gard. ii. p. 53, fig. 159.

GUATEMALA (*Hartweg*).

3. **Xylobium elongatum,** Hemsley.

Maxillaria elongata, Lindl. & Paxt. Fl. Gard. iii. p. 69, fig. 264; Walp. Ann. vi. p. 508; Rchb. f. Beitr. Orch. Centr.-Am. p. 30.

CENTRAL AMERICA, without locality (*Skinner*); COSTA RICA, San Ramon (*Wendland*); PANAMA, Cordillera of Chiriqui (*Warscewicz*). Hb. Kew.

4. **Xylobium stachyobiorum,** Hemsley.

Maxillaria stachyobiorum, Rchb. f. in Bot. Zeit. 1852, p. 735.

NICARAGUA (*Tate*); PANAMA, Chiriqui at 6000 to 8000 feet (*Warscewicz*). Hb. Kew.

45. LACÆNA.

Lacæna, Lindl. Bot. Reg. 1843, Misc. p. 60; Benth. et Hook. Gen. Plant. iii. p. 547.

Confined to Mexico and Central America.

1. **Lacæna bicolor,** Lindl. Bot. Reg. 1843, Misc. p. 60, et 1844, t. 50; Walp. Ann. vi. p. 612; Ill. Hor. t. 33 (var. *glabrata*).

Peristeria longiscapa, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 25.

South Mexico, Oaxaca (*Ghiesbreght*); Guatemala, near Quezaltenango (*Hartweg*). Hb. Kew.

2. **Lacæna spectabilis,** Rchb. f. in Bonplandia, 1854, p. 92, Walp. Ann. vi. p. 612, et Beitr. Orch. Centr.-Am. pp. 24 et 74; Bot. Mag. t. 6516.

Nauenia spectabilis, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1853, p. 193.

Costa Rica, Naranjo (*Wendland*). Hb. Kew.

46. SIEVEKINGIA.

Sievekingia, Rchb. f. Beitr. Syst. Pflanzenk. (1871), p. 3; Benth. et Hook. Gen. Plant. iii. p. 477.

A monotype.

1. **Sievekingia suavis,** Rchb. f. Beitr. Syst. Pflanzenk. p. 3.

Costa Rica (*Endres*).

47. CŒLIOPSIS.

Cœliopsis, Rchb. f. in Gard. Chron. 1872, p. 9; Benth. et Hook. Gen. Plant. iii. p. 477.

A monotype.

1. **Cœliopsis hyacinthosma,** Rchb. f. in Gard. Chron. 1872, p. 9.

Panama (*W. W. Saunders* cult.).

48. LYCASTE.

Lycaste, Lindl. Bot. Reg. 1843, Misc. p. 14; Benth. et Hook. Gen. Plant. iii. p. 547.

This genus is restricted to Tropical America, ranging from Mexico and the West Indies to Peru. About twenty-five species are known.

Colax modestior, Rchb. f. (Hamb. Gart. Zeit. 1860, p. 14), from Guatemala? is probably a species of this genus in the sense of Bentham and Hooker.

1. **Lycaste aromatica,** Lindl. Bot. Reg. 1843, Misc. p. 16; Walp. Ann. vi. p. 600.

Maxillaria aromatica, Grah. in Hook. Exot. Fl. t. 219; Bot. Reg. t. 1871.

Colax aromaticus, Spreng. Syst. Veg. iv. Cur. Post. p. 307.

Mexico (*Lord Napier*).

2. **Lycaste candida,** Lindl. in Lindl. & Paxt. Fl. Gard. ii. p. 37, figg. 151 et 152, obiter et sub falso nomine *L. leucantha,* Klotzsch, *fide* Rchb. f. in Walp. Ann. vi. p. 604, et Beitr. Orch. Centr.-Am. p. 29, t. 5.

Maxillaria (*Lycaste*) *brevispatha,* Kl. in Otto & Dietr. Allg. Gart. Zeit. 1851, p. 217.

Lycaste et *Maxillaria biseriata* et *sordida,* Kl. ex Rchb. f. Beitr. Orch. Centr.-Am. p. 29.

Costa Rica (*Warscewicz*). Hb. Kew.

3. **Lycaste chrysoptera,** Morr. in Ann. Gand, v. t. 232; Lindl. & Paxt. Fl. Gard. i. p. 126; Walp. Ann. vi. p. 601.

MEXICO.

4. **Lycaste cochleata,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 126; Walp. Ann. vi. p. 601.

MEXICO?

5. **Lycaste consobrina,** Rchb.f. in Bot. Zeit. 1852, p. 669; Walp. Ann. vi. p. 600.

MEXICO?

6. **Lycaste crinita,** Lindl. Bot. Reg. 1844, Misc. p. 39; Walp. Ann. vi. p. 601.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2088), Oaxaca (*Loddiges*). Hb. Kew.

7. **Lycaste cruenta,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 126; Walp. Ann. vi. p. 601.

Maxillaria cruenta, Lindl. Bot. Reg. 1842, t. 13.

GUATEMALA, below Alotenango (*Godman & Salvin*). Hb. Kew.

8. **Lycaste deppei,** Lindl. Bot. Reg. 1843, Misc. p. 15; Walp. Ann. vi. p. 602; Gard. Chron. n. s. xvi. p. 717 (var. *punctatissima*).

Maxillaria deppei, Lodd. Bot. Cab. t. 1612; Bot. Mag. t. 3395.

SOUTH MEXICO, Jalapa (*Deppe*), region of Orizaba (*Bourgeau*, 3080, 2466; *Müller*, 471). Hb. Kew.

9. **Lycaste dowiana,** Endres et Rchb. f. in Gard. Chron. n. s. ii. p. 194.

COSTA RICA (*Warscewicz; Endres; Zahn*).

10. **Lycaste lasioglossa,** Rchb. f. in Gard. Chron. 1872, p. 215; Bot. Mag. t. 6251.

GUATEMALA (cultivated by *Veitch*). Hb. Kew.

11. **Lycaste leucantha,** Kl. in Allg. Gart. Zeit. 1850, p. 402; Walp. Ann. vi. p. 603; Rchb. f. Beitr. Orch. Centr.-Am. p. 29; Refug. Bot. ii. t. 102.

COSTA RICA (*Warscewicz*). Hb. Kew.

12. **Lycaste macrophylla,** Lindl. Bot. Reg. 1843, p. 14; Walp. Ann. vi. p. 602; Rchb. f. Beitr. Orch. Centr.-Am. p. 28.

Maxillaria macrophylla, Poepp. et Endl. Nov. Gen. et Sp. i. p. 37, t. 64.

Lycaste plana, Lindl. Bot. Reg. 1842, Misc. p. 85, et 1843, t. 35.

PANAMA, Cordillera of Chiriqui (*Warscewicz*).—COLOMBIA to BOLIVIA.

13. **Lycaste skinneri,** Lindl. Bot. Reg. 1843, Misc. p. 15; Walp. Ann. vi. p. 602.

Maxillaria skinneri, Batem. in Bot. Reg. 1842, Misc. p. 10, et Orch. Mex. & Guat. t. 35; Bot. Mag. t. 4445.

GUATEMALA (*Skinner*), in forests at 4000 feet and upwards in Alta Vera Paz (*Godman & Salvin*). Hb. Kew.

14. **Lycaste tricolor,** Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 185, ex Rchb. in Walp. Ann. vi. p. 603, et Beitr. Orch. Centr.-Am. p. 28, t. 4.

Maxillaria (*Lycaste*) *tricolor,* Kl. *l. c.*

GUATEMALA.

15. **Lycaste xytriophora,** Linden et Rchb. f. in Refug. Bot. ii. t. 131.

COSTA RICA (*Carmiol*).—ECUADOR or PERU.

49. GONGORA.

Gongora, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 117, t. 25; Benth. et Hook. Gen. Plant. iii. p. 549.

An exclusively Tropical-American genus, of which about twenty species are enumerated. They range from Mexico to Brazil.

1. **Gongora armeniaca,** Rchb. f. Xenia Orch. i. p. 52; Walp. Ann. vi. p. 593, et Beitr. Orch. Centr.-Am. p. 22.

Acropera armeniaca, Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 94, fig. 66; Bot. Mag. t. 5501.

Acropera cornuta, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 185.

NICARAGUA (*Warscewicz*). Hb. Kew.

2. **Gongora aromatica,** Rchb. f. in Otto & Dietr. Allg. Gart. Zeit. 1854, p. 281; Walp. Ann. vi. p. 594, et Beitr. Orch. Centr.-Am. p. 50.

NICARAGUA, Segovia (*Œrsted*).

[*Acropera batemani*, mentioned in the description of *A. armeniaca*, and represented by a specimen in Lindley's herbarium labelled "Nicaragua, Skinner," does not appear to have been described.]

3. **Gongora cassidea,** Rchb. f. in Bot. Zeit. 1864, p. 298, et Gard. Chron. n. s. ii. p. 322.

MEXICO; GUATEMALA (*Skinner*).

4. **Gongora galeata,** Rchb. f. in Walp. Ann. vi. p. 591.

Maxillaria galeata, Lindl. in Lodd. Bot. Cab. t. 1645.

Acropera loddigesii, Lindl. Gen. & Sp. Orch. Pl. p. 172.

Acropera flavida, Kl. in Otto et Dietr. Allg. Gart. Zeit. 1851, p. 217.

SOUTH MEXICO, Jalapa (*Schiede; Leibold*), valley of Cordova (*Bourgeau*, 1761), region of Orizaba (*Bourgeau*, 2958). Hb. Kew.

5. **Gongora galeottiana,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 25; Walp. Ann. vi. p. 596.

MEXICO (*Galeotti*).

6. **Gongora quinquenervis,** Ruiz et Pav. Fl. Peruv. Syst. p. 227; Walp. Ann. vi. p. 595.

Gongora maculata, Lindl. Bot. Reg. t. 1616; Bot. Mag. t. 3687.

Gongora fulva, var. *vitellina*, Lindl. Bot. Reg. 1841, Misc. p. 1.
Gongora fulva, Lindl. Bot. Reg. 1839, t. 51.
Gongora leucochila, Lemaire, Fl. des Serres, i. t. 37.
Gongora bufonia leucochila, Lindl. Bot. Reg. 1847, t. 17.
Gongora maculata, var. *alba*, Lindl. Bot. Reg. 1841, Misc. p. 48.

GUATEMALA, Cativa Island, San Juan river (*Friedrichsthal*), without locality (*Warscewicz*).—COLOMBIA to PERU and GUIANA.

7. **Gongora truncata**, Lindl. Bot. Reg. 1843, Misc. p. 42, et 1845, t. 56; Walp. Ann. vi. p. 592.

MEXICO. Hb. Kew.

50. CORYANTHES.

Coryanthes, Hook. Bot. Mag. t. 3102; Benth. et Hook. Gen. Plant. iii. p. 549.

About four or five species inhabiting Tropical America, from Guatemala and Venezuela to Guiana and Brazil.

1. **Coryanthes picturata**, Rchb. f. in Bot. Zeit. 1864, pp. 332 et 415.

HONDURAS, Belize (*Day* cult.).

2. **Coryanthes speciosa**, var., Batem. Orch. Mex. & Guat. t. 36; Rchb. f. in Walp. Ann. vi. p. 597.

GUATEMALA.

Typical *speciosa* is a native of Brazil, and Reichenbach suggests that Bateman's plant belongs rather to *C. maculata*.

51. STANHOPEA.

Stanhopea, Frost in Hook. Bot. Mag. tt. 2948–9; Benth. et Hook. Gen. Plant. iii. p. 549.

A Tropical-American genus of about twenty known species, ranging from Mexico to Brazil.

1. **Stanhopea bucephalus**, Lindl. Gen. & Sp. Orch. Pl. p. 157, Bot. Reg. 1845, t. 24, et Fol. Orch. n. 3.

Epidendrum grandiflorum, Humb. et Bonpl. Pl. Æquin. i. p. 94, t. 27.
Anguloa grandiflora, H. B. K. Nov. Gen. et Sp. i. p. 345.
Stanhopea grandiflora, Rchb. f. in Walp. Ann. vi. p. 587.
Stanhopea jenischiana, Kramer in Bot. Zeit. 1852, p. 934.

SOUTH MEXICO, Orizaba (*Müller*, 503); PANAMA (*Jenisch*).—PERU. Hb. Kew.

2. **Stanhopea calceolus**, Rchb. f. Xenia Orch. i. p. 117; Walp. Ann. vi. p. 583, et Beitr. Orch. Centr.-Am. p. 25.

CENTRAL AMERICA, without locality (*Warscewicz*).

3. **Stanhopea cirrhata**, Lindl. Journ. Hort. Lond. v. p. 37; Lindl. & Paxt. Fl. Gard. i. p. 31, fig. 19; Lindl. Fol. Orch. n. 17; Walp. Ann. vi. p. 584; Rchb. f. Beitr. Orch. Centr.-Am. p. 25.

NICARAGUA (*Warscewicz*). Hb. Kew.

4. **Stanhopea costaricensis,** Rchb. f. in Hamb. Gart. Zeit. 1860, p. 424, et Walp. Ann. vi. p. 589.

COSTA RICA.

5. **Stanhopea cymbiformis,** Rchb. f. Xenia Orch. ii. p. 84, t. 124.

CENTRAL AMERICA ?

The native country of this is not recorded; but we include it here because its affinities are with *C. ruckeri* and *C. oculata.*

6. **Stanhopea devoniensis,** Lindl. Sert. Orch. t. 1, et Fol. Orch. n. 13; Walp. Ann. vi. p. 586; Fl. des Serres, t. 974.

Stanhopea maculosa, Knowles & Westc. Fl. Cab. iii. t. 121 ?

GUATEMALA (*Genl. Dorrien*). Hb. Kew.

On publishing this species Lindley cited as synonyms *Anguloa hernandezii* and the other names of the "Lynx Flower," which he afterwards referred to *S. tigrina.*

7. **Stanhopea eburnea,** Lindl. Bot. Reg. t. 1529; Bot. Mag. t. 3359; Walp. Ann. vi. p. 584; Lindl. Fol. Orch. n. 19.

Stanhopea grandiflora, Lindl. Gen. & Sp. Orch. p. 158, et Fol. Orch. n. 18.

Ceratochilus grandiflorus, Lodd. Bot. Cab. t. 1414.

CENTRAL AMERICA ?—VENEZUELA; GUIANA; BRAZIL.

8. **Stanhopea ecornuta,** Lemaire, Fl. des Serres, ii. t. 181; Lindl. Fol. Orch. n. 20; Walp. Ann. vi. p. 583; Rchb. f. Beitr. Orch. Centr.-Am. p. 24, et Xenia Orch. i. t. 43; Bot. Mag. t. 4885.

Stanhopeastrum ecornutum, Rchb. f. Bot. Zeit. 1852, p. 927.

GUATEMALA (*Warscewicz*). Hb. Kew.

9. **Stanhopea fregeana,** Rchb. f. in Otto & Dietr. Allg. Gart. Zeit. 1855. p. 313, et Walp. Ann. vi. p. 589.

MEXICO (*Pavon; Galeotti*).

10. **Stanhopea gibbosa,** Rchb. f. in Gard. Chron. 1869, p. 1254.

CENTRAL AMERICA ?

11. **Stanhopea graveolens,** Lindl. Bot. Reg. 1840, Misc. p. 59, 1845, sub t. 65, et Fol. Orch. n. 8, excl. ic. Lem. ?; Walp. Ann. vi. p. 589.

GUATEMALA ?

12. **Stanhopea inodora,** Lindl. Bot. Reg. 1845, t. 65, et Fol. Orch. n. 2; Walp. Ann. vi. p. 588; Rchb. f. Xenia Orch. ii. p. 157, t. 165.

MEXICO, imported and cultivated by Messrs. Loddiges.

13. **Stanhopea marshii,** Rchb. f. Xenia Orch. i. p. 120, et in Walp. Ann. vi. p. 586.

GUATEMALA ?

14. **Stanhopea martiana,** Batem. in Bot. Reg. 1840, Misc. p. 50, et 1843, t. 44 ; Orch. Mex. & Guat. t. 27 ; Lindl. Fol. Orch. n. 12 ; Walp. Ann. vi. p. 586.
Stanhopea velata, Morr. Ann. Gand, iii. p..335, t. 153.
South Mexico (*Galeotti ; Karwinski*).

15. **Stanhopea oculata,** Lindl. Gen. & Sp. Orch. p. 158, Bot. Reg. t. 1800, et Fol. Orch. n. 4 ; Rchb. f. in Walp. Ann. vi. p. 587 ; Bot. Mag. t. 5300.
Ceratochilus oculatus, Lodd. Bot. Cab. t. 1764.
Stanhopea guttulata, Lindl. Bot. Reg. 1843, Misc. p. 75, ex Rchb. f.
Stanhopea lindleyi, Zucc. ex Lindl. in Fol. Orch. sub n. 4.
South Mexico (*Schiede ; Karwinski*). Hb. Kew.

16. **Stanhopea pulla,** Rchb. f. in Gard. Chron. n. s. vii. p. 510, et Xenia Orch. iii. p. 205.
Costa Rica (*Endres*).

17. **Stanhopea quadricornis,** Lindl. Bot. Reg. 1838, t. 5, et Fol. Orch. n. 9 ; Walp. Ann. vi. p. 590.
Central America (*Rucker*). Hb. Kew.

18. **Stanhopea ruckeri,** Lindl. Bot. Reg. 1843, sub t. 44, et Fol. Orch. n. 7 ; Walp. Ann. vi. p. 589.
Nicaragua (*Ærsted*).

19. **Stanhopea saccata,** Batem. Orch. Mex. & Guat. t. 15 ; Lindl. Fol. Orch. n. 15 ; Walp. Ann. vi. p. 586.
Guatemala (*Skinner*). Hb. Kew.

20. **Stanhopea tigrina,** Batem. Orch. Mex. & Guat. t. 7 ; Lindl. Fol. Orch. n. 11 ; Bot. Reg. 1839, t. 1 ; Bot. Mag. t. 4197 ; Walp. Ann. vi. p. 587 ; Ann. Gand, i. t. 21 (var. *nigroviolacea*).
Anguloa hernandezii, Kunth, Synop. i. p. 332 (nomen tantum).
Maxillaria lyncea, Lindl. Gen. & Sp. Orch. p. 151 (nomen tantum).
Coatzonte coxoahitl seu *lyncea,* Hernand. Rerum Med. Nov. Hisp. Thesaurus, p. 266 cum figura.
South Mexico, Jalapa (*Henchman*), Vera Cruz to Orizaba (*Müller*, 976). Hb. Kew.
We have cited Hernandez because there is no doubt that this, or a very closely allied form, is the famous "Lynx Flower" of the 'Rerum Med.,' which was adopted as the crest of the original Lyncean Academy of Rome. Independently of the figure of an entire plant reduced, the flower in various combinations is often used as an ornamental tailpiece. It also occurs in Colonna or Columna's 'Ecphrasis' (1616).

21. **Stanhopea wardii,** Loddiges in Lindl. Sert. Orch. t. 20 ; Knowles & Westc. Fl. Cab. ii. t. 90 ; Lindl. Fol. Orch. n. 6 ; Walp. Ann. vi. p. 588 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 26, et Xenia Orch. i. p. 122.
Stanhopea aurea, Lodd. in Bot. Reg. 1841, Misc. p. 11.

Stanhopea amœna, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 273.
Stanhopea graveolens, Lem. Fl. des Serres, ii. Aug. 1846, ex Rchb. f.

GUATEMALA (*Skinner*); PANAMA, Volcan de Chiriqui (*Warscewicz*).—COLOMBIA; VENEZUELA. Hb. Kew.

22. **Stanhopea warscewicziana,** Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 274; Walp. Ann. vi. p. 585; Rchb. f. Xenia Orch. ii. p. 85, t. 125, et Beitr. Orch. Centr.-Am. p. 26; Lindl. Fol. Orch. n. 10.

PANAMA, Volcan de Chiriqui (*Warscewicz*).

52. HOULLETIA.

Houlettia, A. Brongn. in Ann. Sc. Nat. série 2, xv. p. 37; Benth. et Hook. Gen. Plant. iii. p. 550.

About six species in Tropical America, ranging from Costa Rica to Brazil.

1. **Houlettia lansbergii,** Lindl. et Rchb. f. in Regel's Gartenflora, 1855, p. 2, t. 108; Walp. Ann. vi. p. 617.

COSTA RICA (*Endres*).—COLOMBIA; VENEZUELA.

2. **Houlettia,** sp.?

NICARAGUA (*Tate*, 483). Hb. Kew.

53. PERISTERIA.

Peristeria, Hook. Bot. Mag. t. 3116 et 3479; Benth. et Hook. Gen. Plant. iii. p. 550.

Two or three species in the Andes of Colombia.

1. **Peristeria elata,** Hook. Bot. Mag. t. 3116; Seem. Bot. Voy. 'Herald,' p. 71; Walp. Ann. vi. p. 607.

PANAMA, near the city of Panama (*Harrison*).—PERU. Hb. Kew.

54. ACINETA.

Acineta, Lindl. Bot. Reg. 1843, Misc. p. 67; Benth. et Hook. Gen. Plant. iii. p. 551.

An exclusively Tropical-American genus of about eight or ten known species, which range from Mexico to Colombia.

1. **Acineta barkeri,** Lindl. Bot. Reg. 1843, Misc. p. 68; Walp. Ann. vi. p. 611.
Peristeria barkeri, Batem. Orch. Mex. & Guat. t. 8; Bot. Mag. 4203.

SOUTH MEXICO, Jalapa, dark ravines (*Ross*). Hb. Kew.

2. **Acineta chrysantha,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 31; Rchb. f. in Walp. Ann. iii. p. 547, et vi. p. 610.
Neippergia chrysantha, Morr. Ann. Gand, v. p. 375, t. 282.

MEXICO.

3. **Acineta cryptodonta,** Rchb. f. in Bonplandia, 1854, p. 92; Walp. Ann. vi. p. 610; Xenia Orch. i. p. 194, t. 70.

CENTRAL AMERICA?

4. **Acineta densa,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 91, fig. 63; Rchb. f. in Walp. Ann. iii. p. 546, et Beitr. Orch. Centr.-Am. p. 21.

Acineta warscewiczii, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 145.

Costa Rica, Turrialba (*Warscewicz*). Hb. Kew.

5. **Acineta humboldtii,** Lindl. Bot. Reg. 1843, Misc. p. 68; Fl. des Serres; t. 992–3.

Peristeria humboldtii, Lindl. Bot. Reg. 1843, t. 18.

Anguloa superba, H. B. K. Nov. Gen. et Sp. i. p. 343, t. 93.

Acineta superba, Rchb. f. in Walp. Ann. vi. p. 609.

Acineta fulva, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 146.

Central America (ex *Lindley*).—Colombia; Venezuela.

It is doubtful whether this occurs within our limits; and the same may be said of *Acineta schilleriana*, Rchb. f.

6. **Acineta sella-turcica,** Rchb. f. in Bot. Zeit. 1852, p. 705; Walp. Ann. vi. p. 609; Xenia Orch. i. p. 195, t. 70, et Beitr. Orch. Centr.-Am. p. 21.

Panama, cordillera of Chiriqui 6000 to 8000 feet (*Warscewicz*). Hb. Kew.

55. CATASETUM.

Catasetum, L. C. Rich. in Kunth, Synop. Pl. Æquin. i. p. 330; Benth. et Hook. Gen. Plant. iii. p. 551; Darwin, Fert. Orch. p. 211, et in Journ. Linn. Soc. Lond. vi. p. 151.

Catachætum, Hoffmannsegg ex Linnæa, xvi. Litter.-Ber. p. 227.

A remarkable genus, having polygamously trimorphous flowers. About forty species are known, and they are spread nearly all over Tropical America. The male, female, and hermaphrodite flowers were originally regarded as characterizing distinct genera—*Catasetum*, *Monachanthus*, and *Myanthus* respectively.

1. **Catasetum (Monachanthus) dilectum,** Rchb. f. Beitr. Orch. Centr.-Am. p. 73.

Costa Rica, Casa Blanca (*Ærsted*).

2. **Catasetum hookeri,** Lindl. Bot. Reg. sub t. 840, Collect. Bot. t. 40 ♂; Gen. & Sp. Orch. Pl. p. 156; Walp. Ann. vi. p. 567.

Catasetum triste, Rchb. f. in Bonplandia, 1855, p. 218.

Mexico.—Brazil.

3. **Catasetum laminatum,** Lindl. in Ann. Nat. Hist. iv. p. 384, Bot. Reg. 1844, Misc. p. 35, in Benth. Pl. Hartw. p. 72, et Sert. Orch. t. (♀ ex Benth. et Hook. Gen. Pl. iii. p. 552), Bot. Reg. 1841, t. 5. fig. 4 (var. *eburneum*); Rchb. f. in Walp. Ann. vi. p. 573; Refug. Bot. ii. t. 137.

South Mexico, near Oaxaca (*Hartweg; Karwinski*). Hb. Kew.

4. **Catasetum maculatum,** Kunth, Synop. Pl. Æquin. i. p. 331; H. B. K. Nov. Gen. et Sp. vii. p. 157, t. 630; Lindl. Bot. Reg. 1844, Misc. p. 32; Rchb. f. in Walp. Ann. vi. p. 565; Batem. Orch. Mex. & Guat. t. 2, ♂.

Catasetum integerrimum, Hook. Bot. Mag. t. 3823 (♂ ex Benth. et Hook. Gen. Plant. iii. p. 552).
Catasetum wailesii, Hook. Bot. Mag. t. 3937, ♂.

GUATEMALA; HONDURAS (*Skinner*).—VENEZUELA. Hb. Kew.

5. **Catasetum œrstedii,** Rchb. f. in Bonplandia, 1855, p. 218; Walp. Ann. vi. p. 565, et Beitr. Orch. Centr.-Am. pp. 23 et 51.

NICARAGUA (*Œrsted*); PANAMA, Volcan de Chiriqui at 2000 feet (*Warscewicz*).

"Habeo racemum mixtis floribus hujus *Cataseti* ac *Monachanthi*" (Rchb. f. Orch. Centr.-Am. p. 23).

6. **Catasetum russellianum,** Hook. Bot. Mag. t. 3777, ♀; Rchb. f. in Walp. Ann. vi. p. 573; Regel's Gartenflora, t. 121.

Catasetum serratum, Lindl. Bot. Reg. 1847, sub t. 24, adnot.

GUATEMALA (*Skinner*). Hb. Kew.

7. **Catasetum viridiflavum,** Hook. Bot. Mag. t. 4017 ♂; Walp. Ann. vi. p. 565.

CENTRAL AMERICA, Pacific side (*Barclay*); PANAMA (*Lobb*).

8. **Catasetum warscewiczii,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 45, fig. 29; Walp. Ann. vi. p. 574; Rchb. f. Beitr. Orch. Centr.-Am. p. 23.

PANAMA, on *Rhizophora* (*Warscewicz*). Hb. Kew.

56. MORMODES.

Mormodes, Lindl. Introd. Nat. Syst. ed. 2, p. 446; Benth. et Hook. Gen. Plant. iii. p. 552.
Cyclosia, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 305.

A Tropical-American genus of about fifteen species, ranging from Mexico to Peru.

1. **Mormodes aromaticum,** Lindl. Bot. Reg. 1841, Misc. p. 76, 1843, sub t. 33, et t. 56; Walp. Ann. vi. p. 577.

SOUTH MEXICO, Oaxaca (*Loddiges* cult.). Hb. Kew.

2. **Mormodes atropurpureum,** Lindl. Bot. Reg. t. 1861, et 1843, sub t. 33; Walp. Ann. vi. p. 581.

CENTRAL AMERICA; PANAMA. Hb. Kew.

3. **Mormodes buccinator,** Lindl. Bot. Reg. 1840, Misc. p. 10, et 1843, sub t. 33; Rchb. f. in Walp. Ann. vi. p. 578.

Mormodes lentiginosum, Hook. Bot. Mag. t. 4455.
Mormodes flavidum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 113.
Mormodes vitellinum, Kl. l. c. 1853, p. 290.
Mormodes wagenerianum, Kl. l. c. 1853, p. 147.
Mormodes brachystachyum, Kl. Ind. Sem. Hort. Berol. 1852, p. 13.
Mormodes marmoreum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1853, p. 290.
Mormodes leucochilum, Kl. l. c. p. 289.

MEXICO?—VENEZUELA.

It is doubtful whether this has been collected elsewhere than in Venezuela.

4. **Mormodes colossus,** Rchb. f. in Bot. Zeit. 1852, p. 636; Walp. Ann. vi. p. 581, et Beitr. Orch. Centr.-Am. p. 22.

Mormodes macranthum, Lindl. in Lindl. & Paxt. Fl. Gard. iii. sub t. 93.

Costa Rica, Volcan de Turrialba at 9000 feet (*Warscewicz*). Hb. Kew.

5. **Mormodes fractiflexum,** Rchb. in Gard. Chron. 1872, p. 141.

Costa Rica (*Veitch* cult.).

6. **Mormodes hookeri,** Lemaire, Jard. Fleur. i. Misc. p. 116, et ii. t. 118; Walp. Ann. vi. p. 580; Rchb. f. Beitr. Orch. Centr.-Am. p. 22.

Mormodes atropurpureum, Hook. Bot. Mag. t. 4577, nec Lindl.

Mormodes barbatum, Lindl. in Lindl. & Paxt. Fl. Gard. ii. p. 57.

Panama, Volcan de Chiriqui 3000 to 4000 feet (*Warscewicz*).

7. **Mormodes igneum,** Lindl. in Lindl. & Paxt. Fl. Gard. iii. t. 93; Rchb. f. in Walp. Ann. vi. p. 579, et Beitr. Orch. Centr.-Am. p. 22.

Mexico; Central America (*Warscewicz*).

"Plures teneo icones Warscewiczianas coloribus diversissimis. Res non bene lignet. Forsan omnes ad *Mormodem buccinatorem,* Lindl., amandandæ" (Rchb. f.).

8. **Mormodes lineatum,** Batem. Bot. Reg. 1842, t. 43; Walp. Ann. vi. p. 582.

Mormodes warscewiczii, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1854, p. 65.

Guatemala (*Skinner; Hartweg*).—Peru. Hb. Kew.

9. **Mormodes luxatum,** Lindl. Bot. Reg. 1842, Misc. p. 60, et 1843, t. 33; Walp. Ann. vi. p. 577.

South Mexico, near Valladolid (*Ross*). Hb. Kew.

"*M. luxatum,* Lindl., nostro sensu ad *Catasetum* (*Monachanthum*) transferenda est" (Benth. et Hook. Gen. Pl. iii. p. 552).

10. **Mormodes pardinum,** Batem. Orch. Mex. & Guat. t. 14; Bot. Reg. 1843 sub t. 33; Walp. Ann. vi. p. 582; Bot. Mag. t. 3900 et 3879 (var. *unicolor*).

Cyclosia maculata, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 305.

Mexico (*Parkinson*).

11. **Mormodes skinneri,** Rchb. in Gard. Chron. 1869, p. 50.

Guatemala (*Skinner*).

12. **Mormodes uncia,** chb . f. in Gard. Chron. 1869, pp. 892 et 1205.

Mormodes greenii, Hook. f. Bot. Mag. t. 5802.

Mexico (*Veitch* cult.).

13. **Mormodes wendlandi,** Rchb. f. in Walp. Ann. vi. p. 581, et Beitr. Orch. Centr.-Am. p. 74.

Costa Rica, Naranjo (*Wendland*).

14. **Mormodes,** sp.

Guatemala, Medio Monte (*Godman & Salvin,* 269, 274). Hb. Kew.

15. **Mormodes,** sp.

GUATEMALA, Alotenango (*Godman & Salvin*). Hb. Kew.

57. CYCNOCHES.

Cycnoches, Lindl. Gen. & Sp. Orch. Pl. p. 154; Benth. et Hook. Gen. Plant. iii. p. 552.

About eight or ten species inhabiting Tropical America, from Mexico to Guiana. Flowers dimorphous or trimorphous.

1. **Cycnoches aureum,** Lindl. in Lindl. & Paxt. Fl. Gard. iii. t. 75, ic. in Lemaire, Jard. Fleur. iii. t. 264 repetita; Walp. Ann. vi. p. 561; Rchb. f. Beitr. Orch. Centr.-Am. p. 23.

CENTRAL AMERICA, without locality (*Skinner*); PANAMA, Volcan de Chiriqui, 6000 to 8000 feet (*Warscewicz*). Hb. Kew.

2. **Cycnoches dianæ,** Rchb. f. in Bot. Zeit. 1852, p. 636; Walp. Ann. vi. p. 561, et Beitr. Orch. Centr.-Am. p. 24.

PANAMA, Volcan de Chiriqui, 3000 to 4000 feet (*Warscewicz*). Hb. Kew.

3. **Cycnoches maculatum,** Lindl. Bot. Reg. 1840, Misc. p. 10; Walp. Ann. vi. p. 561.

MEXICO; GUATEMALA.—VENEZUELA. Hb. Kew.

4. **Cycnoches ventricosum,** Batem. Orch. Mex. & Guat. t. 5; Bot. Reg. 1843, Misc. p. 75; Walp. Ann. vi. p. 562.

Cycnoches egertonianum, Batem. Orch. Mex. & Guat. t. 40; Bot. Reg. 1846, t. 46 (var. *viride*).

Cycnoches — sexus *Cycnochis ventricosi,* Batem. ?—*warscewiczii,* Rchb. f. Beitr. Orch. Centr.-Am. p. 23.

Cycnoches pentadactylon, Lindl. Bot. Reg. 1843, Misc. p. 18, t. 22, et Lindl. & Paxt. Fl. Gard. iii. p. 6?

SOUTH MEXICO, Oaxaca (*Loddiges*), region of Orizaba (*Bourgeau,* 3231); GUATEMALA, Istapa (*Skinner*); PANAMA, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

The flowers of this species appear to be sexually trimorphous, like those of the *Cataseti*; but which are respectively the male, female, and hermaphrodite remains to be determined.

58. POLYCYCNIS.

Polycycnis, Rchb. f. in Bonplandia, 1855, p. 218; Benth. et Hook. Gen. Plant. iii. p. 553.

Three or four species, inhabiting Central America and Guiana.

1. **Polycycnis barbata,** Rchb. f. in Walp. Ann. vi. p. 618.

Cycnoches barbatum, Lindl. in Journ. Hort. Soc. Lond. iv. p. 268, et in Lindl. & Paxt. Fl. Gard. i. p. 45; Bot. Mag. t. 4479.

COSTA RICA.—COLOMBIA.

2. **Polycycnis gratiosa,** Endres et Rchb. f. in Gard. Chron. 1871, p. 1451.

COSTA RICA (*Endres*).

59. MORMOLYCE.

Mormolyce, Fenzl, Nov. Gen. et Sp. p. 1, t. 2; Benth. et Hook. Gen. Plant. iii. p. 554.

A Mexican monotype.

1. **Mormolyce lineolata**, Fenzl, Nov. Gen. et Sp. p. 1, t. 2, et in Denkschr. Akad. Wiss. Wien, i. p. 253, t. 29.

Trigonidium ringens, Lindl. Bot. Reg. 1840, Misc. p. 57; Rchb. f. in Walp. Ann. iii. p. 541, et vi. p. 504.

South Mexico, Barranca de Tioselo (*Schiede*), without locality (*Hartweg*), Mirador (*Sartorius*). Hb. Kew.

60. MAXILLARIA.

Maxillaria, Ruiz et Pav. Fl. Chil. et Peruv. Prodr. p. 116, t. 25; Benth. et Hook. Gen. Plant. iii. p. 555.

An exclusively Tropical American genus, of which about 120 species have been enumerated. They abound from Mexico to Peru, but are less numerous in the West Indies, Guiana, and Brazil.

1. **Maxillaria acervata**, Rchb. f. in Bonplandia, 1855, p. 217; Walp. Ann. vi. p. 536, et Beitr. Orch. Centr.-Am. pp. 49 et 77.

Costa Rica, Auraguas (*Ærsted*), Naranjo (*Wendland*). Hb. Kew.

2. **Maxillaria aciantha**, Rchb. f. in Bot. Zeit. 1852, p. 858; Walp. Ann. vi. p. 512, et Beitr. Orch. Centr.-Am. pp. 30, 50 et 78.

Lycaste aciantha, Rchb. f. in Bonplandia, 1855, p. 216.

Guatemala, Orataria (*Wendland*); Costa Rica, without locality (*Warscewicz*), Agua Caliente (*Ærsted*). Hb. Kew.

3. **Maxillaria acutipetala**, Hook. Bot. Mag. t. 3966; Walp. Ann. vi. p. 520.

Central America (*Barclay*).

4. **Maxillaria atrata**, Rchb. f. Beitr. Orch. Centr.-Am. p. 31, t. 6.

Psittacoglossum atratum, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 30 ?

Guatemala (*Warscewicz*).

5. **Maxillaria aurantiaca**, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 25; Walp. Ann. vi. p. 928.

Mexico (*Galeotti*).

6. **Maxillaria brachyglossa**, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 24; Walp. Ann. vi. p. 528.

Mexico (*Galeotti*).

7. **Maxillaria cæspitifica**, Rchb. f. in Linnæa, xli. p. 73.

Costa Rica (*Endres*).

8. **Maxillaria camardii,** Rchb. f. in Hamb. Gart. Zeit. 1863, p. 547, et Beitr. Orch. Centr.-Am. p. 49.

Camaridium ochroleucum, Lindl. Bot. Reg. t. 844; Walp. Ann. vi. p. 541.
Cymbidium ochroleucum, Lindl. Gen. & Sp. Orch. Pl. p. 168.
Ornithidium album, Hook. Bot. Mag. t. 3306.

Costa Rica, Agua Caliente (*Œrsted*).—Venezuela; Guiana; Trinidad. Hb. Kew.

9. **Maxillaria crassifolia,** Rchb. f. in Bonplandia, 1854, p. 16; Walp. Ann. vi. p. 529.

Heterotaxis crassifolia, Lindl. Bot. Reg. t. 1028; Lodd. Bot. Cab. t. 1657.
Dicrypta baueri, Lindl. Gen. & Sp. Orch. Pl. p. 152.

South Mexico, valley of Cordova (*Bourgeau*, 2087).—Venezuela. Hb. Kew.

10. **Maxillaria cruenta,** Lindl. Bot. Reg. 1842, t. 13.

Guatemala (*Skinner*).

11. **Maxillaria ctenostachys,** Rchb. f. in Gard. Chron. 1870, p. 39.

Costa Rica (*Veitch* cult.).

12. **Maxillaria cucullata,** Lindl. Bot. Reg. 1840, t. 12 (nec Bot. Mag. t. 3945); Walp. Ann. vi. p. 521; Rchb. f. Beitr. Orch. Centr.-Am. p. 49.

Costa Rica, mountains of Pantasmo, Segovia (*Œrsted*). Hb. Kew.

13. **Maxillaria curtipes,** Hook. Ic. Pl. t. 384; Walp. Ann. vi. p. 524.

Mexico (*Parkinson*). Hb. Kew.

14. **Maxillaria cylindrobulba,** Regel, Ind. Seem. Hort. Petrop. 1858, p. 29, et Gartenflora, 1858, p. 341.

Mexico (*Galeotti*).

15. **Maxillaria elatior,** Rchb. f. in Walp. Ann. vi. p. 532.

Dicrypta elatior, Rchb. f. in Linnæa, xviii. p. 403.
Maxillaria triangularis, Lindl. Bot. Reg. 1845, Misc. p. 9, et Gard. Chron. 1845, p. 211.

South Mexico, region of Orizaba (*Bourgeau*, 3014); Guatemala, Quezaltenango (*Hartweg*). Hb. Kew.

16. **Maxillaria friedrichsthalii,** Rchb. f. in Bot. Zeit. 1852, p. 858; Walp. Ann. vi. p. 513, et Beitr. Orch. Centr.-Am. p. 78.

Nicaragua, Chontales (*Friedrichsthal*); Costa Rica, Turrialba (*Wendland*).

17. **Maxillaria galeottiana,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 24; Walp. Ann. vi. p. 528.

Mexico (*Galeotti*).

[*M. graminifolia*, Rchb. f., syn. *Isochilus graminifolium*, H. B. K., enumerated by Bateman in his list of Mexican and Guatemalan Orchids, is a native of Peru and Ecuador, but we are not aware that it has been found within our limits.]

18. **Maxillaria glumibracteum,** Rchb. f. in Hamb. Gart. Zeit. 1863, p. 11.
Costa Rica (*Warscewicz*).

19. **Maxillaria heraldica,** Rchb. f. in Bot. Zeit. 1852, p. 763, et Walp. Ann. vi. p. 534.
Guatemala.

20. **Maxillaria inaudita,** Rchb. f. Beitr. Orch. Centr.-Am. p. 76.
Costa Rica, Naranjo (*Wendland*).

21. **Maxillaria lindeniana,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 24; Walp. Ann. vi. p. 526.
Mexico (*Galeotti*).
[*M. luteorubra*, Rchb. f., syn. *Isochilus grandiflorum*, Lindl., et *Camaridium luteorubrum*, Lindl., is included in Bateman's list (Orch. Mex. & Guat. p. 16), probably by mistake, as it appears to be confined to Colombia and Peru.]

22. **Maxillaria lyonii,** Lindl. Bot. Reg. 1845, Misc. p. 17; Walp. Ann. vi. p. 525.
South Mexico, Orizaba (*Müller*). Hb. Kew.

23. **Maxillaria macleei,** Batem. in Bot. Reg. 1840, Misc. p. 70; Walp. Ann. vi. p. 532.
Guatemala (*Skinner*).

24. **Maxillaria meleagris,** Lindl. Bot. Reg. 1840, Misc. p. 3; Walp. Ann. vi. p. 521.
South Mexico, Oaxaca (*Loddiges*). Hb. Kew.

25. **Maxillaria nasuta,** Rchb. f. Beitr. Orch. Centr.-Am. p. 104, et in Refug. Bot. ii. t. 103 (*ubi nasalis*).
Costa Rica (*Tucker; Endres*).—Colombia.

26. **Maxillaria nigrescens,** Lindl. Orch. Linden. p. 20; Walp. Ann. vi. p. 518.
Maxillaria rubrofusca, Kl. Ind. Sem. Hort. Berol. 1853.
Central America (*Warscewicz*).—Venezuela; Colombia.

27. **Maxillaria obscura,** Lind. et Rchb. f. Beitr. Orch. Centr.-Am. p. 31; Refug. Bot. ii. t. 78.
Maxillaria cucullata, Hook. Bot. Mag. 3945, non Lindl.
Mexico (*Henchman*); Central America (*Warscewicz*).—Colombia. Hb. Kew.

28. **Maxillaria pumila,** Hook. Bot. Mag. t. 3613; Rchb. f. in Linnæa, xviii. p. 403; Walp. Ann. vi. p. 529.
Mexico (*Leibold*).—Guiana.

29. **Maxillaria puncto-striata,** Rchb. f. in Linnæa, xli. p. 28.

South Mexico, Colima (*Kramer*); Costa Rica.

30. **Maxillaria reichenheimiana,** Rchb. f. in Gard. Chron. 1871, pp. 16 et 78.

Costa Rica (*Endres; Zahn*).

31. **Maxillaria rhombea,** Lindl. Bot. Reg. 1840, sub t. 12; Walp. Ann. vi. p. 522; Rchb. f. Beitr. Orch. Centr.-Am. p. 49.

South Mexico, Oaxaca (*Karwinski*); Nicaragua, mountains of Pantasmo, Segovia (*Ærsted*). Hb. Kew.

32. **Maxillaria ringens,** Rchb. f. in Walp. Ann. vi. p. 523, et Beitr. Orch. Centr.-Am. p. 31.

South Mexico, Oaxaca (*Karwinski*); Guatemala (*Warscewicz*).

33. **Maxillaria rufescens,** Lindl. Bot. Reg. t. 1848; Walp. Ann. vi. p. 525; Rchb. f. Beitr. Orch. Centr.-Am. p. 77.

Maxillaria acutifolia, Lindl. Bot. Reg. 1839, Misc. p. 92.
Maxillaria articulata, Kl. Ind. Sem. Hort. Berol. 1853, p. 11.

Costa Rica, Turrialba (*Wendland*).—Venezuela; Cuba; Trinidad. Hb. Kew.

34. **Maxillaria sulfurina,** Lemaire, Fl. des Serres vi. p. 330 b.

Guatemala.

35. **Maxillaria tenuifolia,** Lindl. Bot. Reg. sub t. 1936, et xxv. t. 8; Rchb. f. in Walp. Ann. vi. p. 532, et Beitr. Orch. Centr.-Am. p. 49.

South Mexico, Vera Cruz (*Hartweg*); Costa Rica, Aguacate (*Ærsted*).

36. **Maxillaria vaginalis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 77.

Costa Rica, Desengaño (*Wendland*).

37. **Maxillaria variabilis,** Batem. in Bot. Reg. sub t. 1986; Walp. Ann. vi. p. 536; Rchb. f. Beitr. Orch. Centr.-Am. p. 49; Bot. Reg. 1838, Misc. p. 23 (var. *impunctata*).

Maxillaria henchmanni, Hook. Bot. Mag. t. 3614.
Maxillaria angustifolia, Hook. Ic. Pl. t. 348.
Maxillaria revoluta, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 185.

South Mexico, without locality (*Parkinson*), Vera Cruz (*Hartweg*), region of Orizaba (*Bourgeau*, 3232, 2468), Mirador (*Liebmann*, 588; *Sartorius*), valley of Cordova (*Bourgeau*, 1911), Cordillera of Vera Cruz at 3500 feet (*Galeotti*, 5013); Guatemala, Alotenango (*Godman & Salvin*, 21); Costa Rica, Aguacate (*Ærsted*). Hb. Kew.

38. **Maxillaria,** sp.

Guatemala, Dueñas (*Godman & Salvin*, 12). Hb. Kew.

39. **Maxillaria,** sp.

GUATEMALA, Ysabal (*Godman & Salvin*, 13), near Mazatenango (*Bernoulli*, 459). Hb. Kew.

40. **Maxillaria,** sp.

SOUTH MEXICO, Cordillera of Oaxaca, at 5000 feet (*Galeotti*, 5018). Hb. Kew.

41. **Maxillaria,** sp.

SOUTH MEXICO, Talea, Oaxaca, 4000 feet (*Galeotti*, 5348). Hb. Kew.

[*Psittacoglossum atratum*, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 29; Benth. et Hook. Gen. Pl. iii. p. 555, is most likely a species of *Maxillaria*.]

61. CAMARIDIUM.

Camaridium, Lindl. in Bot. Reg. sub t. 844; Benth. et Hook. Gen. Plant. iii. p. 556.

A Tropical-American genus of about twelve species.

1. **Camaridium,** sp.? (ex Lindley).

SOUTH MEXICO, Orizaba (*Müller*, 555). Hb. Kew.

2. **Camaridium,** sp. (ex Lindley).

NICARAGUA (*Wright*, 6). Hb. Kew.

62. DICHÆA.

Dichæa, Lindl. Gen. & Sp. Orch. Pl. p. 208; Benth. et Hook. Gen. Plant. iii. p. 556.

A Tropical-American genus of about fifteen species, chiefly inhabiting Mexico, Central America, and the West Indies.

1. **Dichæa brachypoda,** Rchb. f. Beitr. Orch. Centr.-Am. p. 79.

COSTA RICA, San Miguel (*Wendland*).

2. **Dichæa echinocarpa,** Lindl. Gen. & Sp. Orch. Pl. p. 209; Griseb. Fl. Brit. W. Ind. p. 624.

Epidendrum echinocarpon, Swartz, Prodr. Fl. Ind. Occ. p. 124.
Cymbidium echinocarpon, Swartz, Fl. Ind. Occ. p. 1452.
Limodorum pendulum, Aubl. Pl. Guian. t. 322.

SOUTH MEXICO (*Graham*).—WEST INDIES to BRAZIL. Hb. Kew.

3. **Dichæa glauca,** Lindl. Gen. & Sp. Orch. Pl. p. 209; Walp. Ann. vi. p. 823.

Epidendrum glaucum, Swartz. Prodr. Fl. Ind. Occ. p. 124.
Cymbidium glaucum, Swartz. Fl. Ind. Occ. p. 1457.

SOUTH MEXICO, Oaxaca (*Loddiges* cult.); GUATEMALA, in the mountains between Villa Alta and Beteza (*Hartweg*).—CUBA; JAMAICA. Hb. Kew.

4. **Dichæa muricata,** Lindl. Gen. & Sp. Orch. Pl. p. 209.

Cymbidium muricatum, Swartz, Fl. Ind. Occ. p. 1454.

South Mexico, woods of Jalapa (*Galeotti*, 5131); Nicaragua, Chontales (*Seemann*, 179).—West Indies to Brazil. Hb. Kew.

5. **Dichæa œrstedii,** Rchb. f. in Bonplandia, 1855, p. 219; Walp. Ann. vi. p. 824, et Beitr. Orch. Centr.-Am. p. 48.

Nicaragua, Volcan el Viejo (*Œrsted*).

6. **Dichæa panamensis,** Lindl. Gen. & Sp. Orch. p. 209.

Panama (*Cuming*, 1292).—Colombia. Hb. Kew.

7. **Dichæa squarrosa,** Lindl. in Ann. Nat. Hist. iv. p. 384; Walp. Ann. vi. p. 823.

South Mexico, Juquila (*Hartweg*), Oaxaca (*Ghiesbreght*).—Cuba. Hb. Kew.

8. **Dichæa trichocarpa,** Lindl. Gen. & Sp. Orch. Pl. p. 209; Rchb. f. Beitr. Orch. Centr.-Am. p. 79.

Epidendrum trichocarpon, Swartz, Prodr. Fl. Ind. Occ. p. 124.

Cymbidium trichocarpon, Swartz, Fl. Ind. Occ. p. 1455.

South Mexico, Mirador (*Sartorius*); Costa Rica, Cartago (*Wendland*).—Cuba to Brazil. Hb. Kew.

This species, *D. muricata*, *D. latifolia*, and *D. echinocarpa* are very closely allied, and it is not easy to determine the species of some of the forms.

9. **Dichæa trulla,** Rchb. f. Beitr. Orch. Centr.-Am. p. 104.

Nicaragua, Pearl-Key Lagoon, Mosquito coast (*Wullschlägel*).

10. **Dichæa,** sp.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1304); Guatemala (*Bernoulli*, 319). Hb. Kew.

11. **Dichæa,** sp. (aff. *D. echinocarpa*).

South Mexico, region of Orizaba (*Bourgeau*, 2856). Hb. Kew.

[*Pachyphyllum procumbens*, H. B. K., is included in Bateman's list of the Orchids of Mexico and Guatemala, probably by mistake.]

63. ORNITHIDIUM.

Ornithidium, Salisb. in Trans. Hort. Soc. Lond. i. p. 293 (absque char.); Benth. et Hook. Gen. Plant. iii. p. 556.

An exclusively Tropical-American genus of about twenty species, ranging from Mexico and the West Indies to Peru and Brazil.

1. **Ornithidium anceps,** Rchb. f. Beitr. Orch. Centr.-Am. p. 75.

Costa Rica, Cartago (*Wendland*).

2. **Ornithidium densum,** Rchb. f. in Bonplandia, 1855, p. 217, Walp. Ann. vi. p. 488, et in Refug. Bot. ii. t. 105.

Maxillaria densa, Lindl. Bot. Reg. t. 1804.

South Mexico, Misantla (*Schiede*), Zacuapan (*Leibold*; *Ehrenberg*), Cordillera of Vera Cruz (*Galeotti*, 5121; *Liebmann*; *Heller*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 895); Guatemala, Alotenango (*Godman & Salvin*). Hb. Kew.

3. **Ornithidium fulgens,** Rchb. f. Beitr. Orch. Centr.-Am. p. 76.

Costa Rica, Naranjo (*Wendland*).

4. **Ornithidium histrionicum,** Rchb. f. in Bonplandia, 1856, p. 324.

Mexico.

5. **Ornithidium paleatum,** Rchb. f. in Linnæa, xli. p. 36.

Central America.

6. **Ornithidium strumatum,** Endres et Rchb. f. in Gard. Chron. n. s. ii. p. 772, et Xenia Orch. iii. p. 10, t. 207.

Costa Rica (*Endres*).

7. **Ornithidium,** sp.

Guatemala, Vera Paz (*Bernoulli*). Hb. Kew.

64. COMPARETTIA.

Comparettia, Poepp. et Endl. Nov. Gen. et Sp. i. p. 42, t. 73 (excl. *C. saccata*); Benth. et Hook. Gen. Plant. iii. p. 558.

Three species are described, ranging from Mexico to Peru and perhaps to Brazil.

1. **Comparettia coccinea,** Lindl. Bot. Reg. 1838, t. 68; Walp. Ann. vi. p. 688.

Mexico? Brazil?

Lindley says "This . . . . . is said to be a native of Brazil; it, however, agrees so entirely with dried specimens collected near Jalapa, and now before me, that some mistake is to be suspected in its reputed country." It is worthy of note that this orchid figures in one of Miss North's pictures of Brazilian plants at Kew.

2. **Comparettia falcata,** Poepp. et Endl. Nov. Gen. et Sp. t. 73; Benth. Pl. Hartw. p. 93; Walp. Ann. vi. p. 688; Bot. Mag. t. 4980.

Comparettia rosea, Lindl. Bot. Reg. 1840, Misc. p. 78.

Guatemala, mountains of Arcutuno and Medio Monte (*Hartweg*), without locality (*Bernoulli*, 302).—Colombia; Venezuela; Cuba; Jamaica. Hb. Kew.

65. TRICHOCENTRUM.

Trichocentrum, Poepp. et Endl. Nov. Gen. et Sp. ii. p. 11, t. 115; Benth. et Hook. Gen. Plant. iii. p. 559.

A Tropical-American genus of about twelve species.

1. **Trichocentrum caloceras,** Endres et Rchb. f. in Gard. Chron. 1871, p. 1257 (nomen nodum).

COSTA RICA (*Endres*).

2. **Trichocentrum candidum,** Lindl. Bot. Reg. 1843, Misc. p. 9; Walp. Ann. vi. p. 544.

GUATEMALA (*Skinner*). Hb. Kew.

3. **Trichocentrum capistratum,** Linden et Rchb. f. in Gard. Chron. 1871, p. 1257.

COSTA RICA (*Wallis*).

4. **Trichocentrum fuscum,** Lindl. Bot. Reg. t. 1951; Walp. Ann. vi. p 545; Bot. Mag. t. 3969.

Acoidium fuscum, Lindl. l. c.

MEXICO (*Knight* cult.).

5. **Trichocentrum hoegei,** Rchb. f. in Gard. Chron. n. s. xvi. p. 717.

SOUTH MEXICO (*Hoege*).

6. **Trichocentrum pfavii,** Rchb. f. in Gard. Chron. n. s. xvi. p. 70, et xviii. p. 117. fig. 21; Regel's Gartenflora, t. 1103.

CENTRAL AMERICA (*Pfau*).

7. **Trichocentrum tigrinum,** Linden et Rchb. f. in Gard. Chron. 1869, p. 892; Ill. Hort. n. s. t. 282.

CENTRAL AMERICA? to ECUADOR.

66. RODRIGUEZIA.

Rodriguezia, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 115, t. 25; Benth. et Hook. Gen. Plant. iii. p. 559.

Burlingtonia, Lindl. Bot. Reg. t. 1927.

Of this genus about twenty species are known, and they are spread all over Tropical America.

1. **Rodriguezia leochilina,** Rchb. f. in Gard. Chron. 1871, p. 970.

COSTA RICA (*Veitch* cult.).

2. **Rodriguezia secunda,** H. B. K. Nov. Gen. et Sp. i. p. 367, t. 92; Bot. Reg. t. 930; Bot. Mag. t. 3524; Walp. Ann. vi. p. 691.

Rodriguezia lanceolata, Lodd. Bot. Cab. t. 676, nec Ruiz et Pav.

Pleurothallis? coccinea, Hook. Exot. Fl. t. 129.

PANAMA, near the city of Panama (*Seemann,* 641), Chagres (*Fendler,* 439).—WEST INDIES and COLOMBIA to BRAZIL. Hb. Kew.

67. PAPPERITZIA.

Papperitzia, Rchb. f. Bot. Zeit. 1852, pp. 670 et 772; Benth. et Hook. Gen. Plant. iii. p. 477.

A monotype.

1. **Papperitzia leiboldi,** Rchb. f. in Bot. Zeit. 1852, p. 670; Xenia Orch. i. p. 237, t. 100, et Walp. Ann. vi. p. 677.

Leochilus leiboldi, Rchb. f. in Linnæa, xviii. p. 404.

South Mexico, Zacuapan (*Leibold*).

68. TRICHOPILIA.

Trichopilia, Lindl. Introd. Nat. Syst. ed. 2, p. 446, et Bot. Reg. t. 1863; Benth. et Hook. Gen. Plant. iii. p. 559.

Species about sixteen, confined to Tropical-America, and chiefly to Mexico, Central America, and Colombia.

1. **Trichopilia galeottiana,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 26; Walp. Ann. vi. p. 682; Rchb. f. Beitr. Orch. Centr.-Am. p. 69, Xenia Orch. ii. p. 103, et in Gard. Chron. 1865, p. 770.

Trichopilia turialvæ, Batem. in Bot. Mag. t. 5550, nec Rchb. f.

Trichopilia picta, Lemaire, Ill. Hort. t. 225.

South Mexico, Cordillera of Oaxaca at 3000 feet (*Galeotti*, 5105). Hb. Kew.

2. **Trichopilia maculata,** Rchb. f. in Bonplandia, 1855, p. 215, Xenia Orch. ii. p. 104, et Walp. Ann. vi. p. 681.

Panama, Chagres (*Behr*).

3. **Trichopilia marginata,** Henfr. in Moore & Ayres's Gard. Mag. Bot. 1851, p. 185, cum ic. color.; Walp. Ann. vi. p. 682; Rchb. f. Beitr. Orch. Centr.-Am. p. 12.

Trichopilia coccinea, Warscew. ex Lindl. in Lindl. & Paxt. Fl. Gard. ii. t. 54; Bot. Mag. t. 4857; Lemaire, Jard. Fleur. t. 184.

Central America; Panama, Volcan de Chiriqui (*Warscewicz*).

4. **Trichopilia tortilis,** Lindl. Bot. Reg. t. 1863 (errore floribus terminalibus); Bot. Mag. t. 3739; Rchb. f. in Walp. Ann. vi. p. 682, et Xenia Orch. ii. p. 101.

South Mexico, Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 5154), Zacuapan (*Leibold*), without locality (*Parkinson*); Guatemala (*Skinner*), Coban (*Salvin & Godman*). Hb. Kew.

5. **Trichopilia suavis,** Lindl. in Lindl. & Paxt. Fl. Gard. i. pp. 44 et 53, t. 11; Bot. Mag. t. 4654, ic. in Lemaire, Jard. Fleur. t. 277, mutuata; Fl. des Serres, t. 761; Walp. Ann. vi. p. 681; Rchb. f. Beitr. Orch. Centr.-Am. p. 12, et Xenia Orch. ii. p. 103.

Central America (*Warscewicz*).

6. **Trichopilia turialbæ,** Rchb. f. in Hamb. Gart. Zeit. xix. p. 11, Xenia Orch. ii. p. 104, et Beitr. Orch. Centr.-Am. p. 69.

Costa Rica, Volcan de Turrialba (*Wendland*).

7. **Trichopilia,** sp.

NICARAGUA (*Tate*, 495). Hb. Kew.

8. **Trichopilia,** sp.

PANAMA, Aspinwall (*S. Hayes*, 162). Hb. Kew.

69. ASPASIA.

Aspasia, Lindl. Gen. & Sp. Orch. Pl. p. 139; Benth. et Hook. Gen. Plant. iii. p. 560.

An exclusively American genus of about six species, ranging from Central America to Brazil.

1. **Aspasia epidendroides,** Lindl. Gen. & Sp. Orch. p. 139; Bot. Mag. t. 3962.

Odontoglossum aspasia, Rchb. f. in Walp. Ann. vi. p. 851, et Beitr. Orch. Centr.-Am. pp. 16 et 47.

Aspasia fragrans, Kl. in Ind. Sem. Hort. Berol. 1853, p. 12.

GUATEMALA (*Skinner*); COSTA RICA (*Œrsted*); PANAMA, Chiriqui at 2000 feet (*Warscewicz*). Hb. Kew.

2. **Aspasia papilionacea,** Rchb. f. in Gard. Chron. n. s. vi. p. 100.

COSTA RICA.

3. **Aspasia principissa,** Rchb. f. in Bot. Zeit. 1852, p. 637.

Odontoglossum principissa, Rchb. f. in Walp. Ann. vi. p. 851, et Beitr. Orch. Centr.-Am. p. 16.

PANAMA, Veraguas (*Warscewicz*).

70. DIGNATHE.

Dignathe, Lindl. in Journ. Hort. Soc. Lond. iv. p. 268; Benth. et Hook. Gen. Plant. iii. p. 560.

A Mexican monotype.

1. **Dignathe pigmæa,** Lindl. in Journ. Hort. Soc. Lond. iv. p. 268; Walp. Ann. vi. p. 682.

MEXICO (*Loddiges* cult.). Hb. Kew.

71. COHNIA.

Cohnia, Rchb. f. in Bot. Zeit. 1852, p. 928; Benth. et Hook. Gen. Plant. iii. p. 477.

A monotype.

1. **Cohnia quekettioides,** Rchb. f. in Bot. Zeit. 1852, p. 928, et Xenia Orch. i. p. 238, t. 100.

NICARAGUA, Chontales (*Friedrichsthal*).

72. ODONTOGLOSSUM.

Odontoglossum, H. B. K. Nov. Gen. et Sp. i. p. 350; Benth. et Hook. Gen. Plant. iii. p. 561.

This genus is spread all over Tropical America, but the species are most numerous in the mountainous regions from Colombia to Mexico. Upwards of eighty species have been described.

1. **Odontoglossum apterum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 35; Lindl. Fol. Orch. n. 24; Rchb. f. in Walp. Ann. vi. p. 833.

Odontoglossum rossii, Lindl. Sert. Orch. sub t. 25, et Fol. Orch. n. 20; Bot. Reg. 1839, t. 48.

Odontoglossum ehrenbergii, Planch. in Fl. des Serres, t. 846, nec Link, Kl. et Otto.

South Mexico, near Irape (*La Llave*), without locality (*Ross*). Hb. Kew.

2. **Odontoglossum beloglossum,** Rchb. f. Xenia Orch. ii. p. 149, t. 158.

South Mexico, Talea, Oaxaca (*Liebmann; Galeotti*).

3. **Odontoglossum bictoniense,** Lindl. Bot. Reg. 1840, t. 66, Sert. Orch. sub t. 25, et Fol. Orch. n. 28; Walp. Ann. vi. p. 835; Rchb. f. Beitr. Orch. Centr.-Am. pp. 14 et 71; Batem. Odont. t. 18.

Cyrtochilum bictoniense, Batem. Orch. Mex. & Guat. t. 6.

Zygopetalum africanum, Hook. Bot. Mag. t. 3812.

South Mexico, Chiapas (*Ghiesbreght*); Guatemala, Chilasco (*Godman & Salvin*), Las Nubes (*Wendland*), without locality at 6000 to 7000 feet (*Skinner*). Hb. Kew.

4. **Odontoglossum cærulescens,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 27; Lindl. Fol. Orch. n. 26; Walp. Ann. vi. p. 834.

South Mexico, Oaxaca at 7000 feet (*Galeotti*, 5108). Hb. Kew.

5. **Odontoglossum cariniferum,** Rchb. f. Bot. Zeit. 1852, p. 638, Walp. Ann. vi. p. 830, et Beitr. Orch. Centr.-Am. p. 14; Lindl. Fol. Orch. n. 15; Batem. Odont. t. 10.

Odontoglossum hastilabium, var. *fuscatum,* Hook. Bot. Mag. 4919.

Panama, Volcan de Chiriqui at 9000 feet (*Warscewicz*).

6. **Odontoglossum cervantesii,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 34; Lindl. Fol. Orch. n. 25; Bot. Reg. 1845, t. 36; Walp. Ann. vi. p. 834; Lindl. Paxt. Fl. Gard. i. t. 15.

Odontoglossum membranaceum, Lindl. Sert. Orch. sub t. 25; Bot. Reg. 1846, t. 34; Ann. Gand, t. 10; Bot. Mag. t. 4923.

South Mexico, near Oaxaca (*Loddiges* cult.), without locality (*Karwinski*). Hb. Kew.

7. **Odontoglossum chiriquense,** Rchb. f. in Bot. Zeit. 1852, p. 692, Walp. Ann. vi. p. 847, et Beitr. Orch. Centr.-Am. p. 15.

Panama, Cordillera of Chiriqui at 8000 feet (*Warscewicz*).

8. **Odontoglossum citrosmum,** Lindl. Bot. Reg. 1842, Misc. p. 60, 1843, t. 3, et Fol. Orch. n. 59; Rchb. f. in Walp. Ann. vi. p. 846, et in Bonplandia, 1855, p. 210; Lemaire, Jard. Fleur. t. 90; Warner, Sel. Orch. t. 28.

Cuitlauzina pendula, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 33.

Odontoglossum pendulum, Batem. Odont. t. 6.

Lichterveldia lindleyi, Lemaire, Ill. Hort. t. 59.

South Mexico (*La Llave; Karwinski*). Hb. Kew.

9. **Odontoglossum cordatum,** Lindl. Bot. Reg. 1838, Misc. p. 50, et Fol. Orch. n. 12; Knowles & Westc. Fl. Cab. t. 100; Rchb. f. in Walp. Ann. vi. p. 829, et Beitr. Orch. Centr.-Am. p. 70.

Odontoglossum maculatum, Hook. Bot. Mag. t. 4878.

Odontoglossum lüddemanni, Regel's Gartenflora, t. 275.

Odontoglossum hookeri, Lemaire, Ill. Hort. iii. Misc. p. 41.

South Mexico, Orizaba (*Müller*, 488); Guatemala, Cumbre of Chuacus (*Hartweg*), Las Nubes (*Wendland*). Hb. Kew.

10. **Odontoglossum dawsonianum,** Rchb. f. in Gard. Chron. 1865, p. 1226.

Mexico (*Low* cult.).

11. **Odontoglossum ehrenbergii,** Kl. in Link, Kl. et Otto, Ic. Pl. Rar. p. 38, t. 16; Lindl. & Paxt. Fl. Gard. iii. p. 27, fig. 247; Lindl. Fol. Orch. n. 19; Walp. Ann. vi. p. 832.

South Mexico, San Onofro (*Ehrenberg*). Hb. Kew.

12. **Odontoglossum egertoni,** Lind. Bot. Reg. 1845, Misc. p. 50, et Fol. Orch. p. 64; Walp. Ann. vi. p. 848.

Guatemala (*Skinner*).

13. **Odontoglossum galeottianum,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 27; Lindl. Fol. Orch. n. 22; Walp. Ann. vi. p. 833.

South Mexico, Cordillera of Oaxaca at 7000 to 8000 feet (*Galeotti*, 5109). Hb. Kew.

14. **Odontoglossum ghiesbreghtianum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 27; Lindl. Fol. Orch. n. 67; Walp. Ann. vi. p. 848.

Mexico.

15. **Odontoglossum grande,** Lindl. Bot. Reg. 1840, Misc. p. 47, et Fol. Orch. n. 9; Walp. Ann. vi. p. 828; Rchb. f. Beitr. Orch. Centr.-Am. p. 14; Bot. Mag. t. 3955; Ann. Gand, i. t. 37; Batem. Orch. Mex. & Guat. t. 24, et Odont. t. 8.

Guatemala, cooler parts of Guatemala (*Skinner; Hartweg; Warscewicz*), Volcan de Fuego (*Godman & Salvin*). Hb. Kew.

16. **Odontoglossum insleayi,** Lind. Fol. Orch. n. 8; Walp. Ann. vi. p. 828; Batem. Odont. t. 4.

Oncidium insleayi, Barker in Bot. Reg. 1840, Misc. p. 19; Batem. Orch. Mex. & Guat. t. 21; Fl. des Serres, t. 43.

South Mexico, Oaxaca (*Loddiges* cult.). Hb. Kew.

17. **Odontoglossum karwinskii,** Rchb. f. in Bonplandia, 1855, p. 214, et Walp. Ann. vi. p. 842.

Miltonia karwinskii, Lindl. in Journ. Hort. Soc. Lond. iv. p. 83, cum fig. xylogr.; Paxt. Mag. Bot. xvi. p. 161, cum ic. color.

Oncidium karwinskii, Lindl. Sert. Orch. sub t. 20.
Cyrtochilum karwinskii, Lindl. Bot. Reg. sub t. 1992.
South Mexico (*Karwinski; Hartweg*). Hb. Kew.

18. **Odontoglossum krameri,** Rchb. f. in Gard. Chron. 1868, p. 98; Bot. Mag. 5778; Batem. Odont. t. 24.
Costa Rica (*Kramer*).

19. **Odontoglossum læve,** Lindl. in Bot. Reg. 1844, t. 39, et Fol. Orch. n. 52; Walp. Ann. vi. p. 842; Bot. Mag. t. 6265; Batem. Odont. t. 16.
Guatemala (*Skinner; Hartweg*). Hb. Kew.

20. **Odontoglossum leucomelas,** Rchb. f. in Bot. Zeit. 1864, p. 415, et Xenia Orch. ii. p. 194, t. 184.
Mexico? (*Warner* cult.).

21. **Odontoglossum londesboroughianum,** Rchb. f. in Gard. Chron. n. s. vi. p. 772.
Mexico (*Backhouse* cult.).

22. **Odontoglossum macrum,** Lindl. Fol. Orch. n. 33; Walp. Ann. vi. p. 836.
Central America, Puerto Muelo at 7000 feet (ex *Lindley*). Hb. Kew.

23. **Odontoglossum maculatum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 35; Lindl. Fol. Orch. n. 11; Bot. Reg. 1840, t. 30; Walp. Ann. vi. p. 829; Pescatorea, t. 28.
South Mexico, valley of Cordova (*Bourgeau*, 2281), Oaxaca (*Ghiesbreght*), without locality (*Karwinski*). Hb. Kew.

24. **Odontoglossum madrense,** Rchb. f. in Gard. Chron. n. s. ii. p. 804, et viii. p. 102.
Odontoglossum maxillare, Bot. Mag. t. 6144, nec Lindl.
North Mexico, Sierra Madre (*Roezl*).

25. **Odontoglossum maxillare,** Lindl. in Bot. Reg. 1847, sub t. 62, et Fol. Orch. n. 23; Walp. Ann. vi. p. 834; Ill. Hort. t. 200.
Mexico (*Roezl*). Hb. Kew.

26. **Odontoglossum nebulosum,** Lindl. Sert. Orch. sub t. 25, et Fol. Orch. n. 21; Walp. Ann. vi. p. 833; Batem. Odont. t. 1.
South Mexico, near Oaxaca at 5000 feet (*Galeotti*), without locality (*Karwinski*). Hb. Kew.

27. **Odontoglossum œrstedii,** Rchb. f. in Bonplandia, 1855, p. 214, Walp. Ann. vi. p. 845, Xenia Orch. i. p. 189, t. 68, et Beitr. Orch. Centr.-Am. pp. 15, 47, et 71.
Costa Rica, Volcan de Irazu at 9000 feet (*Warscewicz; Œrsted; Wendland*). Hb. Kew.

28. **Odontoglossum oliganthum,** Rchb. f. in Bonplandia, 1856, p. 321.
GUATEMALA (*Skinner*). Hb. Kew.

29. **Odontoglossum pulchellum,** Batem. in Bot. Reg. 1841, t. 48; Bot. Mag. t. 4104; Rchb. f. in Walp. Ann. vi. p. 848, et Beitr. Orch. Centr.-Am. pp. 16 et 47.
SOUTH MEXICO, Chiapas (*Ghiesbreght*); GUATEMALA (*Skinner*), near Quiché (*Salvin & Godman*); COSTA RICA, Cartago (*Œrsted*); PANAMA, Veraguas (*Warscewicz*). Hb. Kew.

30. **Odontoglossum pygmæum,** Lindl. in Benth. Pl. Hartw. p. 82, et Fol. Orch. n. 58; Rchb. f. in Walp. Ann. vi. p. 845.
Rhynchostele pygmæa, Rchb. f. in Bot. Zeit. 1852, p. 770.
GUATEMALA, Quezaltenango (*Hartweg*). Hb. Kew.

31. **Odontoglossum reichenheimii,** Rchb. f. in Bonplandia, 1855, p. 214; Walp. Ann. vi. p. 842; Batem. Odont. t. 15; Ill. Hort. t. 213.
MEXICO (*Ghiesbreght*). Hb. Kew.

32. **Odontoglossum rubescens,** Lindl. in Journ. Hort. Soc. Lond. v. p. 35, et Fol. Orch. n. 27; Walp. Ann. vi. p. 834.
SOUTH MEXICO, Oaxaca at 6000 feet (*Galeotti*, 5277); NICARAGUA, without locality (*Skinner*). Hb. Kew.

33. **Odontoglossum schlieperianum,** Rchb. f. in Gard. Chron. 1865, p. 1082, Beitr. Orch. Centr.-Am. p. 70, et Xenia Orch. ii. p. 127, t. 143; Regel, Gartenflora, t. 605.
COSTA RICA, Cartago (*Wendland*).

34. **Odontoglossum stellatum,** Lindl. Bot. Reg. 1841, Misc. p. 9, et Fol. Orch. n. 18; Rchb. f. in Walp. Ann. vi. p. 832, et Beitr. Orch. Centr.-Am. pp. 13 et 70.
Odontoglossum erosum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 27.
Odontoglossum (*Leucoglossum*) *erosum,* Rchb. f. et Warsc. in Bonplandia, 1854, p. 99.
MEXICO (*Hartweg*); GUATEMALA, Volcan de Fuego and Cuesta de Arqueta (*Skinner*), Las Nubes (*Wendland*). Hb. Kew.

35. **Odontoglossum uroskinneri,** Lindl. in Gard. Chron. 1859, pp. 708 et 724; Batem. Odont. t. 2; Warner, Sel. Orch. 3, t. 17.
GUATEMALA, near Santa Catarina de los Altos (*Skinner*), above San Gerónimo (*Salvin & Godman*). Hb. Kew.

36. **Odontoglossum vexativum,** Rchb. f. in Gard. Chron. n. s. vi. p. 808.
MEXICO.

37. **Odontoglossum warscewiczianum,** Rchb. f. in Bot. Zeit. 1852, p. 692, Walp. Ann. vi. p. 844, Xenia Orch. i. p. 208, t. 81, et Beitr. Orch. Centr.-Am. p. 14.
PANAMA, Cordillera of Veraguas (*Warscewicz*).

38. **Odontoglossum warnerianum,** Rchb. f. in Bot. Zeit. 1864, p. 297; Batem. Odont. t. 13. f. 1.

MEXICO?

39. **Odontoglossum,** sp.

SOUTH MEXICO, Cordillera of Oaxaca at 7500 to 9000 feet (*Galeotti*, 5010). Hb. Kew.

40. **Odontoglossum,** sp.

SOUTH MEXICO, Cordillera of Oaxaca at 8000 to 9000 feet (*Galeotti*, 5079). Hb. Kew.

41. **Odontoglossum,** sp.

SOUTH MEXICO, Cordillera of Oaxaca at 7000 feet (*Galeotti*, 5108). Hb. Kew.

42. **Odontoglossum,** sp.

GUATEMALA (*Bernoulli*, 338). Hb. Kew.

[*Mesospinidium warscewiczii*, Rchb. f. Xenia Orch. i. p. 36, t. 16, et Beitr. Orch. Centr.-Am. p. 11, Mr. Bentham (Journ. Linn. Soc. Lond. xviii. p. 328) regards as an *Odontoglossum*, "which appears to be very close to, if not identical with, *O. ramulosum*, Lindl."]

73. ONCIDIUM.

Oncidium, Swartz in K. Vetensk. Akad. Nya Handl. Stockh. xxi. p. 239; Benth. et Hook. Gen. Plant. iii. p. 562.

An exclusively Tropical-American genus, of which some 250 species have been proposed. They are generally diffused from Mexico and the West Indies to Bolivia and Brazil.

1. **Oncidium altissimum,** Swartz in K. Vetensk. Akad. Nya Handl. Stock. xxi. p. 239; Lindl. Gen. & Sp. Orch. Pl. p. 200, et Fol. Orch. n. 150; Bot. Reg. t. 1851; Bot. Mag. t. 2990; Walp. Ann. vi. p. 791, nec Bot. Reg. t. 1651.

Epidendrum altissimum, Jacq. Sel. Stirp. Am. p. 229, t. 141.

GUATEMALA (*Bernoulli*, 279).—WEST INDIES. Hb. Kew.

2. **Oncidium amœnun,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26; Lindl. Fol. Orch. p. 58; Walp. Ann. vi. p. 817.

MEXICO (*Galeotti*).

3. **Oncidium ampliatum,** Lindl. Gen. & Sp. Orch. Pl. p. 202, et Fol. Orch. n. 90; Bot. Reg. t. 1699; Walp. Ann. vi. p. 744; Rchb. f. Beitr. Orch. Centr.-Am. pp. 47 et 104.

GUATEMALA, Esquintla (*Hartweg*); NICARAGUA, Pearl-Key Lagoon, Mosquito coast (*Wullschlägel*); COSTA RICA, Guanacaste (*Œrsted*).—COLOMBIA; WEST INDIES. Hb. Kew.

4. **Oncidium ansiferum,** Rchb. f. in Bot. Zeit. 1852, p. 696, Walp. Ann. vi. p. 798, Xenia Orch. i. p. 232, t. 98, et Beitr. Orch. Centr.-Am. p. 18; Lindl. Fol. Orch. n. 162.

PANAMA, Volcan de Chiriqui at 8000 feet (*Warscewicz*). Hb. Kew.

5. **Oncidium ascendens,** Lindl. Bot. Reg. 1842, sub t. 4, et Fol. Orch. n. 43; Walp. Ann. vi. p. 720, et Beitr. Orch. Centr.-Am. p. 47.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2230), Chinantla near Oaxaca at 2000 feet (*Galeotti*, 5351); GUATEMALA (*Hartweg*); NICARAGUA (ex *Reichenbach*). Hb. Kew.

6. **Oncidium barbatum,** Lindl. Collect. Bot. t. 27, Gen. & Sp. Orch. p. 200, et Fol. Orch. n. 47 (varietates); Rchb. f. in Walp. Ann. vi. p. 723.

Oncidium microglossum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1855, p. 233.
Oncidium ciliatum, Lindl. Gen. & Sp. Orch. Pl. p. 200; Bot. Reg. t. 1660.
Oncidium ciliatulum, Hoffmannsegg in Bot. Zeit. i. p. 834.
Oncidium fimbriatum, Hoffmannsegg, l. c.

GUATEMALA (ex *Reichenbach*).—BRAZIL.

7. **Oncidium batemanianum,** Parmentier in Knowles & Westc. Fl. Cab. iii. p. 183, t. 137; Lindl. Fol. Orch. n. 185; Rchb. f. in Walp. Ann. vi. p. 808 (varietates 2).

Oncidium spilopterum, Lindl. Bot. Reg. 1844, Misc. p. 75, et 1845, t. 40.
Oncidium gallopavinum, Morr. Ann. Gand, i. t. 1.
Oncidium ramosum, Lindl. Bot. Reg. sub. t. 1920.
Oncidium pinellianum, Lindl. in Journ. Hort. Soc. Lond. iii., Proc. p. xv et xvii, cum fig. xylogr.
Oncidium stenopetalum, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1855, p. 273.

MEXICO?—BRAZIL.

It is almost certain that this species is not found within our limits.

8. **Oncidium bicallosum,** Lindl. in Benth. Pl. Hartw. p. 94, et Fol. Orch. n. 135; Rchb. f. in Walp. Ann. vi. p. 785, et Beitr. Orch. Centr.-Am. p. 72; Bot. Reg. 1843, t. 12; Bot. Mag. 4148.

GUATEMALA, without locality (*Skinner; Hartweg*), at the foot of Las Nubes (*Wendland*).

9. **Oncidium brachyandrum,** Lindl. Sert. Orch. sub t. 25, et Fol. Orch. n. 111; Walp. Ann. vi. p. 753.

SOUTH MEXICO, Santiago el Grande (ex *Grisebach*), without locality (*Karwinski*). Hb. Kew.

10. **Oncidium bracteatum,** Warscew. et Rchb. f. in Bot. Zeit. 1852, p. 695, Walp. Ann. vi. p. 753, et Rchb. f. Beitr. Orch. Centr.-Am. p. 19; Lindl. Fol. Orch. n. 139.

PANAMA, Volcan de Chiriqui 6000 to 9000 feet (*Warscewicz*). Hb. Kew.

11. **Oncidium brevifolium,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26; Lindl. Fol. Orch. Oncid. p. 58; Walp. Ann. vi. p. 817.

MEXICO (*Galeotti*).

12. **Oncidium bryolophotum,** Rchb. f. in Gard. Chron. 1871, p. 738.
CENTRAL AMERICA (*Veitch* cult.).

13. **Oncidium cardiochilum,** Lindl. Fol. Orch. n. 87; Walp. Ann. vi. p. 743.
GUATEMALA (*Skinner*).—COLOMBIA. Hb. Kew.

14. **Oncidium cardiostigma,** Rchb. f. in Bonplandia, 1854, p. 91; Walp. Ann. vi. p. 789, et Xenia Orch. i. p. 94, t. 99.
MEXICO?

15. **Oncidium carthaginense,** Swartz in K. Vetensk. Akad. Nya Handl. Stock. xxi. p. 240; Lindl. Fol. Orch. n. 130 (varietates plures); Walp. Ann. vi. p. 781.
Epidendrum carthaginense, Jacq. Sel. Stirp. Am. p. 228, t. 133. fig. 4.
Epidendrum undulatum, Bot. Mag. t. 777.
Oncidium ærstedii, Rchb. f. in Bonplandia, 1854, p. 91 (species), in Walp. Ann. vi. p. 781, Xenia, Orch. i. p. 236, t. 99, et Beitr. Orch. Centr.-Am. p. 47 (varietas).
Oncidium sanguineum, Lindl. Sert. Orch. t. 27.
Oncidium huntianum, Hook. Bot. Mag. t. 3806.
Oncidium panduriferum, H. B. K. Nov. Gen. et Sp. i. p. 346, t. 82.
Oncidium roseum et *O. henchmanni,* Lodd. Cat. ex Lindley.
Oncidium luridum henchmanni, Knowles & Westc. Fl. Cab. iii. t. 97.
NICARAGUA (*Ærsted*).—COLOMBIA to BRAZIL and in the WEST INDIES.
Only the variety *ærstedii* has been found within our limits.

16. **Oncidium cavendishianum,** Batem. Orch. Mex. & Guat. t. 3; Lindl. Fol. Orch. n. 134; Walp. Ann. vi. p. 784, excl. syn. *Oncidium pachyphyllum,* Hook. Bot. Mag. t. 3807.
GUATEMALA (*Skinner*), Dueñas (*Salvin & Godman*). Hb. Kew.

17. **Oncidium cebolleta,** Swartz ex Lindl. Gen. & Sp. Orch. Pl. p. 206, et Fol. Orch. n. 42 (varietates); Walp. Ann. vi. p. 720; Bot. Reg. t. 1994; Bot. Mag. t. 3568.
Epidendrum cebolleta, Jacq. Sel. Stirp. Am. p. 230, t. 131. fig. 2.
Epidendrum juncifolium, L. Sp. Pl. ed. 2, p. 1351.
Cymbidium juncifolium, Willd. Sp. Pl. iv. p. 102.
Oncidium juncifolium, Lindl. Collect. Bot. sub t. 27; Rchb. f. Beitr. Orch. Centr.-Am. p. 71.
Oncidium cepula, Hoffmannsegg, ex Lindl.
Oncidium brachyphyllum, Lindl. Bot. Reg. 1842, sub t. 4.
Oncidium longifolium, Lindl. Bot. Reg. 1842, t. 4.
SOUTH MEXICO, Mirador (*Linden*); GUATEMALA; COSTA RICA, Santa Lucia (*Wendland*). —Southward to PERU and BRAZIL. Hb. Kew.

18. **Oncidium cerebriferum,** Rchb. f. in Bot. Zeit. 1852, p. 695, Walp. Ann. vi. p. 805, Xenia Orch. i. p. 233, t. 98, et Beitr. Orch. Centr.-Am. p. 18; Lindl. Fol. Orch. n. 179.
PANAMA, Volcan de Chiriqui at 3000 to 6000 feet (*Warscewicz*). Hb. Kew.

19. **Oncidium cheirophorum,** Rchb. f. in Bot. Zeit. 1852, p. 695; Walp. Ann. vi. p. 776, Xenia Orch. i. p. 191, t. 69, et Beitr. Orch. Centr.-Am. p. 17; Lindl. Fol. Orch. n. 124; Bot. Mag. t. 6278.

PANAMA, Volcan de Chiriqui at 8000 feet (*Warscewicz*). Hb. Kew.

20. **Oncidium concolor,** Hook. Bot. Mag. t. 3752; Lindl. Fol. Orch. n. 65; Walp. Ann. vi. p. 731.

Cyrtochilum citrinum, Hook. Bot. Mag. t. 4454.

MEXICO? CENTRAL AMERICA? BRAZIL. Hb. Kew.

21. **Oncidium confusum,** Rchb. f. Xenia Orch. i. p. 234, et Beitr. Orch. Centr.-Am. p. 18.

PANAMA, Volcan de Chiriqui 3000 to 6000 feet (*Warscewicz*).

22. **Oncidium crista-galli,** Rchb. f. in Bot. Zeit. 1852, p. 697; Walp. Ann. vi. p. 746, et Beitr. Orch. Centr.-Am. p. 71; Lindl. Fol. Orch. n. 96.

Oncidium iridifolium, Lindl. Bot. Reg. t. 1911 (excl. syn.), nec H. B. K.

Oncidium decipiens, Lindl. Fol. Orch. n. 68.

SOUTH MEXICO, Oaxaca at 3000 feet (*Galeotti,* 5289); GUATEMALA, without locality (*Skinner*), Barranca Honda at 3800 feet (*Godman & Salvin*); COSTA RICA, Turrialba (*Wendland*). Hb. Kew.

23. **Oncidium delumbe,** Lindl. Fol. Orch. n. 169; Walp. Ann. vi. p. 801.

Oncidium tenue grandiflorum, Lindl. in Journ. Hort. Soc. Lond. vii. p. 271, cum fig. xylogr.

GUATEMALA (*Skinner*). Hb. Kew.

24. **Oncidium diaphanum,** Rchb. f. in Linnæa, xli. p. 67.

SOUTH MEXICO, Talea at 5000 feet (*Galeotti,* 5281). Hb. Kew.

25. **Oncidium ensatum,** Lindl. in Bot. Reg. 1842, Misc. p. 17, et Fol. Orch. n. 175; Walp. Ann. vi. p. 803.

SOUTH MEXICO, near Oaxaca (*Hartweg*): GUATEMALA (*Skinner*). Hb. Kew.

26. **Oncidium excavatum,** Lindl. Sert. Orch. sub t. 25, et Fol. Orch. n. 85; Walp. Ann. vi. p. 742 (excl. syn.).

HONDURAS?—COLOMBIA; PERU.

27. **Oncidium forkelii,** Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1842, p. 309; Lindl. Fol. Orch. p. 57.

MEXICO.

28. **Oncidium funereum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 37; Lindl. Fol. Orch. p. 57; Walp. Ann. vi. p. 817.

SOUTH MEXICO, near Jesus del Monte (*La Llave*).

29. **Oncidium ghiesbreghtianum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 27; Walp. Ann. vi. p. 818; Lindl. Fol. Orch. p. 58.

MEXICO (*Galeotti*).

30. **Oncidium glossomystax,** Rchb. f. in Bot. Zeit. 1854, p. 696; Walp. Ann. vi. p. 714.

SOUTH MEXICO, Vera Cruz at 2000 feet (*Galeotti*, 5133); GUATEMALA, without locality (*Skinner*).—VENEZUELA; COLOMBIA; PERU. Hb. Kew.

31. **Oncidium graminifolium,** Lindl. Sert. Orch. sub t. 48, et Fol. Orch. n. 110 (varietates); Walp. Ann. vi. p. 752.

Cyrtochilum graminifolium, Lindl. in Ann. Nat. Hist. iv. p. 384.
Oncidium filipes, Lindl. Sert. Orch. sub t. 48.
Cyrtochilum filipes, Lindl. Bot. Reg. 1841, t. 59.
Oncidium wrayæ, Hook. Bot. Mag. t. 3854.

SOUTH MEXICO, Hacienda del Carmen (*Hartweg*), Cerro de Capulalpan, Oaxaca 8000 to 9000 feet (*Galeotti*, 5177); GUATEMALA (*Skinner*). Hb. Kew.

32. **Oncidium hastatum,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 9, et Fol. Orch. n. 192; Walp. Ann. vi. p. 812.

Odontoglossum phyllochilum, Morr. in Ann. Gand, i. t. 27.
Odontoglossum hastatum, Batem. Orch. Mex. & Guat. t. 20.
Cyrtochilum jurgensenianum, Lemaire, Jard. Fleur. t. 368.

SOUTH MEXICO, Oaxaca at 4000 feet (*Galeotti*, 5085), Michoacan (*Ghiesbreght*), Chinantla (*Jurgensen*). Hb. Kew.

33. **Oncidium incurvum,** Barker in Bot. Reg. 1840, Misc. p. 75, et 1845, t. 64; Lindl. Fol. Orch. n. 72; Walp. Ann. vi. p. 736.

Oncidium albo-violaceum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 27.

SOUTH MEXICO, Talea, Oaxaca 4000 to 5000 feet (*Galeotti*, 5021), Llano Verde (*Hartweg*). Hb. Kew.

34. **Oncidium iridifolium,** H. B. K. Nov. Gen. et Sp. i. p. 344; Lindl. Gen. & Sp. Orch. Pl. p. 202, et Fol. Orch. n. 26.

Epidendrum pusillum, Linn. Sp. Pl. ed. 2, p. 1352.
Cymbidium pusillum, Swartz in Nov. Act. Ups. vi. p. 74.
Oncidium pusillum, Rchb. f. in Walp. Ann. vi. p. 714, et Beitr. Orch. Centr.-Amer. pp. 16 et 71.

SOUTH MEXICO, Mirador (*Linden*, 32), Sierra San Pedro Nolasco, &c. (*Jurgensen*); GUATEMALA, Mazatenango (*Bernoulli*, 50), Ysabal (*Godman & Salvin*), without locality (*Skinner*); COSTA RICA, La Virgen (*Wendland*); PANAMA, Chiriqui (*Warscewicz*).—Southward to PERU and BRAZIL and in the WEST INDIES. Hb. Kew.

35. **Oncidium leucochilum,** Batem. in Bot. Reg. sub t. 1920, et Orch. Mex. & Guat. t. 1; Lindl. Fol. Orch. n. 167; Walp. Ann. vi. p. 800.

Cyrtochilum leucochilum, Planch. in Fl. des Serres, t. 522.
Oncidium digitatum, Lindl. in Benth. Pl. Hartw. p. 94.

GUATEMALA, mountains near Melacatan (*Hartweg*), without locality (*Skinner*). Hb. Kew.

36. **Oncidium luridum**, Lindl. Bot. Reg. t. 727, et Fol. Orch. n. 131 (*varietates*); Bot. Mag. t. 3603; Bot. Reg. 1839, t. 16 (var. *guttatum*); Journ. Hort. Soc. Lond. vi. p. 54, cum ic. xylogr. (var. *atratum*).
Epidendrum guttatum, Linn. Sp. Pl. ed. 2, p. 1351.
Cymbidium guttatum, Willd. Sp. Pl. iv. p. 102.
Oncidium guttatum, Rchb. f. in Walp. Ann. vi. p. 782.
Oncidium cuneatum, Lindl. Collect. Bot. sub t. 27.
Oncidium lindeni, Lodd. ex Lindl. Sert. Orch. sub t. 48.
Oncidium intermedium, Knowles & Westc. Fl. Cab. t. 60.
Oncidium cosymbephorum, Morr. Ann. Gand, t. 275.
Oncidium sanguineum, Lindl. var. *auriculatum*, Regel, Ind. Sem. Hort. Bot. Petrop. 1855, p. 21.

SOUTH MEXICO, near Tampico (*Hartweg*), without locality (*Schiede*).—CUBA to TRINIDAD and GUIANA. Hb. Kew.

37. **Oncidium macranthum**, Lindl. Gen. & Sp. Orch. Pl. p. 205, et Fol. Orch. n. 1; Walp. Ann. vi. p. 702.

CENTRAL AMERICA to PERU. Hb. Kew.

38. **Oncidium maculatum**, Lindl. Sert. Orch. sub t. 48, et Fol. Orch. n. 113; Rchb. f. in Walp. Ann. vi. p. 754, et Beitr. Orch. Centr.-Am. p. 72.

α. **herbaceum**, Lindl. Fol. Orch. Oncid. p. 33.
Cyrtochilum maculatum, Lindl. in Bot. Reg. 1838, t. 44; Sert. Orch. t. 25; Bot. Mag. 3836.

β. **russellianum**, Lindl. loc. cit.
Cyrtochilum maculatum, var., Bot. Mag. t. 3880.

γ. **parviflorum**, Lindl. loc. cit.
Cyrtochilum maculatum, var. *parviflorum*, Lindl. Bot. Reg. 1841, Misc. p. 43.

δ. **lindleyi**, Lindl. loc. cit.
Odontoglossum lindleyi, Galeotti, ex Lindley, loc. cit.
Oncidium maculatum donianum, Rchbf. f. in Bonplandia, 1855, p. 215.

ε. **vinosum**, Lindl. loc. cit.

ζ. **psittacinum**, Rchb. f. ex Lindl. loc. cit.
Oncidium maculatum, var. *aristatum*, Regel, Ind. Sem. Hort. Bot. Petrop. 1855.

One of the commonest species in MEXICO and CENTRAL AMERICA. Hb. Kew.

39. **Oncidium microchilum**, Batem. in Bot. Reg. 1840, Misc. p. 82, et 1843, t. 23; Lindl. Fol. Orch. n. 21; Walp. Ann. vi. p. 711; Refug. Bot. ii. t. 122.

GUATEMALA (*Skinner*, *Hartweg*). Hb. Kew.

40. **Oncidium nebulosum,** Lindl. Bot. Reg. 1841, Misc. p. 81, et Fol. Orch. n. 175; Rchb. f. in Walp. Ann. vi. p. 802, et Beitr. Orch. Centr.-Am. p. 18.

Oncidium geertianum, Morr. Ann. Gand, iv. t. 179.

Oncidium klotzschianum, Rchb. f. in Bot. Zeit. 1852, p. 695.

GUATEMALA (*Skinner*); PANAMA, Volcan de Chiriqui 4000 to 5000 feet (*Warscewicz*). Hb. Kew.

41. **Oncidium oblongatum,** Lindl. Bot. Reg. 1844, Misc. p. 4; Lindl. & Paxt. Fl. Gard. ii. p. 9, fig. 137; Lindl. Fol. Orch. n. 168; Walp. Ann. vi. p. 801.

Oncidium xanthochlorum, Kl. Ind. Sem. Hort. Berol. 1852, p. 13.

MEXICO (*Loddiges* cult.). Hb. Kew.

42. **Oncidium obovatum,** Presl, Reliq. Hænk. i. p. 99; Lindl. Fol. Orch. p. 57; Walp. Ann. vi. p. 817.

MEXICO.

43. **Oncidium ochmatochilum,** Rchb. f. in Bot. Zeit. 1852, p. 698; Walp. Ann. vi. p. 813, et Beitr. Orch. Centr.-Am. p. 16.

PANAMA, Volcan de Chiriqui 8000 feet (*Warscewicz*). Hb. Kew.

44. **Oncidium ornithorhynchum,** H. B. K. Nov. Gen. et Sp. i. p. 345, t. 80; Lindl. Gen. & Sp. Orch. Pl. p. 204, et Fol. Orch. n. 189; Walp. Ann. vi. p. 811; Rchb. f. Beitr. Orch. Centr.-Am. p. 17; Bot. Reg. 1840, t. 10; Bot. Mag. t. 3912; Batem. Orch. Mex. & Guat. t. 4.

SOUTH MEXICO, Michoacan (*Humboldt & Bonpland*), Llano Verde (*Hartweg*), Oaxaca 3000 feet (*Galeotti*, 5019), Vera Cruz (*Linden*), region of Orizaba (*Bourgeau*, 3234), Sierra San Pedro Nolasco (*Jurgensen*, 644); GUATEMALA, without locality (*Skinner*), Dueñas (*Godman & Salvin*).—PERU. Hb. Kew.

45. **Oncidium onustum,** Lindl. Fol. Orch. n. 35; Walp. Ann. vi. p. 717.

PANAMA and WEST COLOMBIA (*Cuming*, 1208). Hb. Kew.

46. **Oncidium pachyphyllum,** Hook. Bot. Mag. 3807; Rchb. f. Beitr. Orch. Centr.-Am. pp. 16 et 72.

MEXICO (*Parkinson*). Hb. Kew.

Lindley reduced this to *O. cavendishianum*, Batem., but Reichenbach restored it again to the rank of a species.

47. **Oncidium peliogramma,** Lind. et Rchb. f. in Gard. Chron. 1871, p. 1451.

PANAMA, Volcan de Chiriqui (*Wallis*).

48. **Oncidium pergameneum,** Lindl. in Benth. Pl. Hartw. p. 93, Fol. Orch. n. 196; Walp. Ann. vi. p. 814.

GUATEMALA, Medio Monte (*Hartweg*). Hb. Kew.

49. **Oncidium phymatochilum,** Lindl. in Lindl. & Paxt. Fl. Gard. i. p. 78, Fol. Orch. n. 191; Walp. Ann. vi. p. 812; Pescatorea, t. 33; Bot. Mag. t. 5214.

MEXICO? BRAZIL? Hb. Kew.

50. **Oncidium polycladium,** Rchb. f. in Lindl. Fol. Orch. n. 164, Walp. Ann. vi. p. 799, et Beitr. Orch. Centr.-Am. p. 17.

PANAMA, Volcan de Chiriqui (*Warscewicz*). Hb. Kew.

51. **Oncidium rariflorum,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26; Lindl. Fol. Orch. p. 58; Walp. Ann. vi. p. 817.

SOUTH MEXICO (*Galeotti*).

52. **Oncidium reflexum,** Lindl. Bot. Reg. sub t. 1920, et Fol. Orch. n. 58; Walp. Ann. vi. p. 795; Rchb. f. Xenia Orch. i. p. 93, t. 36.

Oncidium pelicanum, Mart. in Bot. Reg. 1847, t. 70.

Oncidium funereum, Lindl. Gen. & Sp. Orch. Pl. p. 201.

SOUTH MEXICO, near Morelia 5000 to 6000 feet (*Galeotti*, 5211), without locality (*Karwinski*). Hb. Kew.

53. **Oncidium retemeyerianum,** Rchb. f. in Bot. Zeit. 1856, p. 513, Refug. Bot. ii. t. 74, et Xenia Orch. iii. p. 43, t. 218.

MEXICO?

54. **Oncidium rupestre,** Lindl. in Benth. Pl. Hartw. p. 151, et Fol. Orch. n. 52; Walp. Ann. vi. p. 807.

Oncidium skinneri, Lindl. in Gard. Chron. 1855, p. 629.

CENTRAL AMERICA? PERU.

55. **Oncidium sphacelatum,** Lindl. Sert. Orch. sub t. 48, Bot. Reg. 1842, t. 30, et Fol. Orch. n. 151; Walp. Ann. vi. p. 791.

NORTH MEXICO, Tlapocoya (*Liebmann*, 480–482), valley of Cordova (*Bourgeau*, 2333), Oaxaca 2000 to 3000 feet (*Galeotti*, 5176), Tabasco (*Linden*, 1223); GUATEMALA, Malpais (*Skinner*). Hb. Kew.

56. **Oncidium splendidum,** A. Rich. in Fl. des Serres, t. 1825; Rchb. f. in Gard. Chron. 1870, p. 1213.

Oncidium tigrinum, var. *splendidum,* Hook. f. Bot. Mag. t. 5878, excl. syn.

GUATEMALA.

57. **Oncidium stelligerum,** Rchb. f. in Gard. Chron. 1873, p. 1398.

MEXICO?

58. **Oncidium stenotis,** Rchb. f. in Linnæa, xli. p. 67.

COSTA RICA (*Low* cult.).

59. **Oncidium stipitatum,** Lindl. in Benth. Bot. Voy. 'Sulphur,' p. 172, et Fol. Orch. n. 40; Walp. Ann. vi. p. 719.

Oncidium lacerum, Lindl. Bot. Reg. 1846, t. 27.

Panama (*Cuming*, 1192; *Sinclair*). Hb. Kew.

60. **Oncidium stramineum,** Batem. in Bot. Reg. 1838, Misc. p. 39, et 1840, t. 14; Lindl. Fol. Orch. n. 123; Walp. Ann. vi. p. 775.

South Mexico, neighbourhood of Vera Cruz (*Hartweg*). Hb. Kew.

61. **Oncidium suave,** Lindl. Bot. Reg. 1843, p. 16; Lindl. & Paxt. Fl. Gard. ii. p. 9, fig. 135, Fol. Orch. n. 161; Walp. Ann. vi. p. 797.

Oncidium wendlandianum, Rchb. f. in Bonplandia, 1854, p. 91.

Oncidium macropterum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26.

South Mexico, Cordillera of Oaxaca 7000 to 8000 feet (*Galeotti*, 5046), Teoxomulco, near Oaxaca (*Karwinski*), without locality (*Schiede*). Hb. Kew.

62. **Oncidium suttoni,** Batem. in Bot. Reg. 1842, Misc. p. 4; Lindl. & Paxt. Fl. Gard. ii. p. 8, fig. 129; Lindl. Fol. Orch. n. 166; Walp. Ann. vi. p. 800.

Guatemala, Medio Monte (*Skinner*). Hb. Kew.

63. **Oncidium tenue,** Lindl. in Journ. Hort. Soc. Lond. iii. p. 76, cum fig. xylogr., et Fol. Orch. n. 165; Walp. Ann. vi. p. 799.

South Mexico, near Oaxaca at 4000 to 6000 feet (*Galeotti*, 5324); Guatemala (*Hartweg*). Hb. Kew.

64. **Oncidium tetrapetalum,** Willd. Sp. Pl. iv. p. 112; Lindl. Gen. & Sp. Orch. Pl. p. 198, et Fol. Orch. n. 36; Walp. Ann. vi. p. 717.

Oncidium pauciflorum, Lindl. Collect. Bot. sub t. 27; Gen. & Sp. Orch. Pl. p. 198.

Oncidium tricolor, Hook. Bot. Mag. t. 4130.

Epidendrum tetrapetalum, Jacq. Sel. Stirp. Am. p. 230, t. 142.

Mexico (hb. *Pavon*).—Colombia; West Indies.

65. **Oncidium tigrinum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 36; Lindl. Fol. Orch. n. 157; Walp. Ann. vi. p. 794.

Oncidium barkeri, Lindl. Bot. Reg. 1841, Misc. p. 174, et Sert. Orch. t. 48.

Odontoglossum tigrinum, Lindl. Fol. Orch. n. 10.

Oncidium unguiculatum, Lindl. in Journ. Hort. Soc. Lond. i. p. 303.

Oncidium ionosmum, Lindl. in Gard. Chron. 1853, p. 726.

South Mexico, Mountains near Valladolid (*La Llave*), Michoacan (*Ghiesbreght*). Hb. Kew.

66. **Oncidium tricuspidatum,** Rchb. f. Beitr. Orch. Centr.-Am. p. 72.

Costa Rica, Cartago (*Wendland*).

[*O. confragosum*, Lindl., at first erroneously reported as Mexican, is a synonym of *O. viperinum*, Lindl., a native of Paraguay.]

67. **Oncidium warneri,** Lindl. Fol. Orch. n. 125; Walp. Ann. vi. p. 776.
Odontoglossum warneri, Lindl. Bot. Reg. 1845, Misc. p. 54, et 1847, t. 20 (var. *purpuratum*).
MEXICO (*Loddiges* cult.). Hb. Kew.

68. **Oncidium warscewiczii,** Rchb. f. in Bot. Zeit. 1852, p. 693; Walp. Ann. vi. p. 727, et Beitr. Orch. Centr.-Am. p. 19.
COSTA RICA, Cartago (*Warscewicz*); PANAMA, Volcan de Chiriqui 8000 to 1000 feet (*Warscewicz*). Hb. Kew.

69. **Oncidium wenthworthianum,** Batem. in Bot. Reg. 1840, Misc. p. 82; Lindl. & Paxt. Fl. Gard. ii. p. 8, fig. 127; Lindl. Fol. Orch. n. 195; Walp. Ann. vi. p. 814; Batem. Orch. Mex. & Guat. t. 39.
GUATEMALA, without locality (*Skinner*), Santa Rosa (*Hartweg*). Hb. Kew.

70. **Oncidium,** sp.
GUATEMALA, Alotenango (*Godman & Salvin*, 19). Hb. Kew.

71. **Oncidium,** sp.
GUATEMALA (*Godman & Salvin*, 2). Hb. Kew.

[*Oncidium helenæ*, Rchb. f. Beitr. Orch. Centr.-Am. p. 20, syn. *Brassia warscewiczii*, Rchb. f. in Bot. Zeit. 1852, p. 693, is recorded in the latter place from Punta Elena, Ecuador, though included in the enumeration of Central-American orchids of the former work. There is a Punta Elena on the coast of both Ecuador and Costa Rica; but we are unable to decide which of the two is the home of the plant under consideration.]

74. PALUMBINA.

Palumbina, Rchb. f. in Walp. Ann. vi. p. 699; Benth. et Hook. Gen. Plant. iii. p. 563, sub *Oncidio*.

A monotype.

1. **Palumbina candida,** Rchb. f. in Walp. Ann. vi. p. 699; Bot. Mag. t. 5546.
Oncidium? candidum, Lindl. Fol. Orch. n. 53.
GUATEMALA (*Hartweg*).

75. BRASSIA.

Brassia, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 215; Benth. et Hook. Gen. Plant. iii. p. 564.

A Tropical-American genus, of about twenty species, ranging from Mexico and the West Indies to Brazil.

1. **Brassia brachiata,** Lindl. in Benth. Pl. Hartw. p. 94, Bot. Reg. 1847, t. 29, et Fol Orch. n. 8; Rchb. f. in Bonplandia, 1855, p. 215.
Oncidium brachiatum, Rchb. f. in Walp. Ann. vi. p. 768.
GUATEMALA, Hacienda de Laguna (*Hartweg*). Hb. Kew.

2. **Brassia caudata,** Lindl. Bot. Reg. t. 832, Fol. Orch. n. 5; Bot. Mag. t. 3451; Hook. Exot. Fl. t. 179; Batem. Orch. Mex. & Guat. p. 15.

Epidendrum caudatum, Linn. Sp. Pl. ed. 2, p. 1349.

Oncidium caudatum, Rchb. f. in Walp. Ann. vi. p. 766.

MEXICO and GUATEMALA (ex *Bateman*).—CUBA to GUIANA.

3. **Brassia chlorops,** Rchb. f. in Gard. Chron. 1873, p. 542.

COSTA RICA (*Endres*). Hb. Kew.

4. **Brassia gireoudiana,** Rchb. f. et Warsc. in Otto & Dietr. Allg. Gart. Zeit. 1854, p. 273: Rchb. f. Xenia Orch. i. p. 79, t. 32.

Oncidium gireoudianum, Rchb. f. in Walp. Ann. vi. p. 768, et Beitr. Orch. Centr.-Am. p. 20.

COSTA RICA (*Warscewicz*).

5. **Brassia lanceana,** Lindl. Bot. Reg. t. 1754, et Fol. Orch. n. 2; Bot. Mag. t. 3577 et 3794?

Oncidium suaveolens, Rchb. f. in Walp. Ann. vi. p. 765.

Brassia macrostachya, Lindl. Sert. Orch. t. 6.

Brassia pumila, Lindl. Bot. Reg. 1845, Misc. p. 60.

PANAMA (*Behr*).—WEST INDIES; GUIANA. Hb. Kew.

6. **Brassia lawrenceana,** Lindl. Bot. Reg. 1841, Misc. p. 2, t. 18, et Fol. Orch. n. 3; Bot. Mag. t. 5748 (var. *longissima*).

Oncidium lawrenceanum, Rchb. f. in Walp. Ann. vi. p. 766.

Brassia cochleata, Knowles & Westc. Fl. Cab. ii. p. 23, t. 53.

Brassia angusta, Lindl. Bot. Reg. 1844, Misc. p. 5.

COSTA RICA.—GUIANA; BRAZIL.

Only the variety *longissima* is recorded from Central America.

7. **Brassia neglecta,** Rchb. f. et Warsc. in Otto & Dietr. Allg. Gart. Zeit. 1856, p. 322.

CENTRAL AMERICA?

8. **Brassia maculata,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 215; Lindl. Fol. Orch. n. 1; Bot. Mag. t. 1691.

Oncidium brassia, Rchb. f. in Walp. Ann. vi. p. 765.

Brassia guttata, Lindl. in Benth. Pl. Hartw. p. 94.

Brassia wrayæ, Hook. Bot. Mag. t. 4003.

GUATEMALA (*Skinner*).—JAMAICA.

9. **Brassia verrucosa,** Lindl. Bot. Reg. 1840, Misc. p. 36, et Fol. Orch. n. 9; Batem. Orch. Mex. & Guat. t. 22.

Oncidium verrucosum, Rchb. f. in Walp. Ann. vi. p. 769.

Brassia odontoglossoides, Kl. in Otto & Dietr. Allg. Gart. Zeit. 1847, p. 330?

Brassia coryandra, Morr. Ann. Gand, iv. p. 295, t. 212.

Brassia aristata, Lindl. Bot. Reg. 1844, Misc. p. 7, et Fol. Orch. n. 10.

Brassia longiloba, DC. Dixième Not. Pl. Rar. Genève, t. 1.

SOUTH MEXICO, Oaxaca (*Ghiesbreght*), without locality (*Ehrenberg*); GUATEMALA (*Skinner*). Hb. Kew.

76. LEIOCHILUS.

Leiochilus, Knowles & Westc. Fl. Cab. ii. p. 143 (errore *Leochilus*); Benth. et Hook. Gen. Plant. iii. p. 564.
Cryptosaccus, err. typ. *Cryptosanus*, Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1843, p. 101.

A genus of four or five species, inhabiting the West Indies, Mexico, and Central America.

1. **Leiochilus carinatus**, Lindl. Bot. Reg. 1842, Misc. p. 23.

Oncidium carinatum, Knowles & Westc. Fl. Cab. ii. p. 31; Walp. Ann. vi. p. 772; Refug. Bot. ii. t. 75.

SOUTH MEXICO, Jalapa (*Barker*, cult.), Zacuapan (*Leibold*). Hb. Kew.

2. **Leiochilus oncidioides**, Knowles & Westc. Fl. Cab. ii. p. 143; Lindl. Bot. Reg. 1842, Misc. p. 23.

Oncidium macrantherum, Hook. Bot. Mag. t. 3845; Walp. Ann. vi. p. 740.
Rodriguezia maculata, Lindl. Bot. Reg. 1840, Misc. p. 89.

SOUTH MEXICO, valley of Cordova (*Bourgeau*), Orizaba (*Müller*); GUATEMALA (*Skinner*). Hb. Kew.

3. **Leiochilus**, sp.

SOUTH MEXICO, Cordillera of Vera Cruz at 4000 feet (*Galeotti*, 5139). Hb. Kew.

77. ERYCINA.

Erycina, Lindl. Fol. Orch. 1853; Benth. et Hook. Gen. Plant. iii. p. 565.

Monotypic.

1. **Erycina echinata**, Lindl. Fol. Orch. 1853.

Oncidium echinatum, H. B. K. Nov. Gen. et Sp. i. p. 345, t. 79; Walp. Ann. vi. p. 739.

SOUTH MEXICO, near Acapulco (*Humboldt & Bonpland*), Laguna of Tututepec, Oaxaca, at 4000 feet (*Galeotti*, 5359), without locality (*Parkinson*). Hb. Kew.

78. TRIGONIDIUM.

Trigonidium, Lindl. Bot. Reg. t. 1923; Benth. et Hook. Gen. Plant. iii. p. 567.

A Tropical-American genus, of seven or eight published species, ranging from Central America to Brazil.

1. **Trigonidium egertonianum**, Batem. in Bot. Reg. 1838, Misc. p. 73; Walp. Ann. vi. p. 503.

GUATEMALA, Golfo Dulce (*Skinner*).

2. **Trigonidium seemannii,** Rchb. f. in Seem. Bot. Voy. 'Herald,' p. 214; Walp. Ann. vi. p. 503.

PANAMA (*Seemann*, 380).

79. TRIZEUXIS.

Trizeuxis, Lindl. Collect. Bot. t. 2; Benth. et Hook. Gen. Plant. iii. p. 566.

A monotype.

1. **Trizeuxis falcata,** Lindl. Collect. Bot. t. 2, et Gen. & Sp. Orch. Pl. p. 140; Hook. Exot. Fl. t. 126; Rchb. f. Beitr. Orch. Centr.-Am. p. 48.

COSTA RICA, Cartago (*Ærsted*).—COLOMBIA; VENEZUELA; BRAZIL; TRINIDAD.

80. IONOPSIS.

Ionopsis, H. B. K. Nov. Gen. et Sp. i. p. 348, t. 83; Benth. et Hook. Gen. Plant. iii. p. 567.

An exclusively Tropical-American genus, spread from Mexico and the West Indies to Brazil. About ten species have been defined.

1. **Ionopsis brevifolia,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26; Lindl. Fol. Orch. n. 4; Walp. Ann. vi. p. 684.

MEXICO (*Galeotti*).

2. **Ionopsis utricularioides,** Lindl. Collect. Bot. t. 39, et Gen. & Sp. Orch. Pl. p. 194; Walp. Ann. vi. p. 684; Rchb. f. Beitr. Orch. Centr.-Am. p. 72.

Epidendrum utricularioides, Swartz, Prodr. Fl. Ind. Occ. p. 122.

Dendrobium utricularioides, Swartz, Fl. Ind. Occ. p. 1531.

Ionopsis tenera, Lindl. Bot. Reg. t. 1904, Fol. Orch. n. 6 (varietates).

Ionopsis zonalis, Lindl. in Lindl. & Paxt. Fl. Gard. ii. p. 13, fig. 14.

SOUTH MEXICO, Sochiapam, on the frontiers of Vera Cruz and Oaxaca (*Hartweg*); GUATEMALA, Oratoria (*Wendland*).—Southward to PERU and BRAZIL, and in the WEST INDIES. Hb. Kew.

81. CRYPTARRHENA.

Cryptarrhena, R. Br. in Bot. Reg. t. 153; Benth. et Hook. Gen. Plant. iii. p. 568.

Besides the following species there is one in Guiana.

1. **Cryptarrhena pallidiflora,** Rchb. f. in Bot. Zeit. 1852, p. 766, et Walp. Ann. vi. p. 698.

Orchidofunkia pallidiflora, A. Rich. et Gal. in Ann. Sci. Nat. série 3, iii. p. 24.

Clynhymenia pallidiflora, A. Rich. et Gal. in Compt. Rend. Acad. Sc. Par. 1844.

SOUTH MEXICO, Oaxaca (*Galeotti*, 5298).—JAMAICA; TRINIDAD; GUIANA. Hb. Kew.

Bentham and Hooker, *loc. cit.*, suggest that this is the same as the type of the genus, *C. lunata*, R. Br.

82. ORNITHOCEPHALUS.

Ornithocephalus, Hook. Exot. Fl. t. 127; Benth. et Hook. Gen. Plant. iii. p. 568.

An exclusively Tropical-American genus, of about twenty species, ranging from Mexico to Brazil.

1. **Ornithocephalus bicornis,** Lindl. in Benth. Bot. Voy. 'Sulphur,' p. 172; Walp. Ann. i. p. 781, et vi. p. 492.

NICARAGUA, Chontales (*Tate*, 166, 460, 461); PANAMA (*Sinclair*). Hb. Kew.

2. **Ornithocephalus elephas,** Rchb. f. in Walp. Ann. vi. p. 493.

GUATEMALA, on the Rio Torre (*Friedrichsthal*).

3. **Ornithocephalus inflexus,** Lindl. in Ann. Nat. Hist. iv. p. 384; Walp. Ann. vi. p. 493.

Ornithocephalus mexicana, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 24.

SOUTH MEXICO, between Oaxaca and Vera Cruz (*Hartweg*), Mirador (*Liebmann*, 215; *Linden*, 33), Cordillera of Vera Cruz 2000 to 3000 feet (*Galeotti*, 5130). Hb. Kew.

4. **Ornithocephalus iridifolius,** Rchb. f. in Walp. Ann. vi. p. 494.

SOUTH MEXICO, Zacuapan (*Leibold*).

5. **Ornithocephalus salvinii,** Rchb. f. MS. in herb. Kew.

GUATEMALA, Barranca Honda at 3600 feet (*Salvin*). Hb. Kew.

83. LOCKHARTIA.

Lockhartia, Hook. Bot. Mag. t. 2715; Benth. et Hook. Gen. Plant. iii. p. 570.
Fernandezia, Lindl. Gen. & Sp. Orch. Pl. p. 207, non Ruiz et Pav.

A genus of about fifteen described species, spread nearly all over Tropical America.

1. **Lockhartia amœna,** Endres et Rchb. f. in Gard. Chron. 1872, p. 666.

COSTA RICA (*Endres*).

2. **Lockhartia elegans,** Hook. Bot. Mag. t. 2715; Griseb. Fl. Brit. W. Ind. p. 624; Rchb. f. Xenia Orch. i. p. 100; Walp. Ann. vi. p. 820.

Fernandezia elegans, Lodd. Bot. Cab. t. 1214; Lindl. Gen. & Sp. Orch. Pl. p. 207.

SOUTH MEXICO, Teoxomulco (*Karwinski*)? PANAMA, Veraguas (ex *Grisebach*).—VENEZUELA; TRINIDAD; BRAZIL.

3. **Lockhartia micrantha,** Rchb. f. in Bot. Zeit. 1852, p. 768; Walp. Ann. vi. p. 820, et Xenia Orch. i. p. 106, t. 40.

PANAMA, Veraguas (*Hinds*), without locality (*Cuming*).—COLOMBIA. Hb. Kew.

4. **Lockhartia mirabilis,** Rchb. f. Xenia Orch. i. p. 106, et Beitr. Orch. Centr.-Am. p. 12; Walp. Ann. vi. p. 820.

Oncidium mirabile, Rchb. f. in Bot. Zeit. 1852, p. 697; Lindl. Fol. Orch. n. 34.

PANAMA, Volcan de Chiriqui (*Warscewicz*).

5. **Lockhartia œrstedii,** Rchb. f. Xenia Orch. i. p. 105, t. 40, et Beitr. Orch. Centr.-Am. p. 40; Walp. Ann. vi. p. 821.

Costa Rica, Volcan de Barba (*Œrsted*), without locality (*Endres*).—Venezuela. Hb. Kew.

6. **Lockhartia pallida,** Rchb. f. Xenia Orch. i. p. 102, t. 39, et Walp. Ann. vi. p. 819.

Panama, Chagres (*Behr*), without locality (*S. Hayes*, 106).—Colombia. Hb. Kew.

7. **Lockhartia verrucosa,** Rchb. f. in Hamb. Gart. Zeit. 1859, p. 53; Refug. Bot. ii. t. 76.

Fernandezia robusta, Batem. in Bot. Mag. t. 5592.

Guatemala (*Skinner; Bernoulli*, 316). Hb. Kew.

8. **Lockhartia,** sp.

Nicaragua (*Tate*, 459). Hb. Kew.

9. **Lockhartia,** sp.?

Nicaragua, Chontales (*Tate*, 322, 492). Hb. Kew.

84. CAMPYLOCENTRON.

Campylocentron, Benth. in Journ. Linn. Soc. xviii. p. 337; Benth. et Hook. Gen. Plant. iii. p. 585.
Todaroa, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 28, non Webb.

About fifteen species, inhabiting Tropical America, from Mexico and the West Indies to Brazil.

1. **Campylocentron schiedei,** Benth. in herb. Kew.

Aeranthus schiedei, Rchb. f. in Walp. Ann. vi. p. 901.
Angræcum schiedei, Rchb. f. in Linnæa, xxii. p. 857, et Walp. Ann. iii. p. 572.
Todaroa micrantha, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 28.

South Mexico, Papantla (*Liebmann*, 261), Jalapa (*Schiede; Ehrenberg*); Guatemala, near Mazatenango (*Bernoulli*, 403). Hb. Kew.

The Guatemalan plant may be different.

[*Cirrhæa tristis*, Lindl. Bot. Reg. t. 1889, reported from Mexico, is almost certainly Brazilian.]

85. MACRADENIA.

Macradenia, R. Br. in Bot. Reg. t. 612; Benth. et Hook. Gen. Plant. iii. p. 586.

Five species have been described, and they inhabit Guatemala, the West Indies, and Guiana.

1. **Macradenia brassavolæ,** Rchb. f. in Bot. Zeit. 1852, p. 734, Walp. Ann. vi. p. 697, et Beitr. Orch. Centr.-Am. p. 11.

Guatemala (*Warscewicz*).

86. NOTYLIA.

Notylia, Lindl. Bot. Reg. sub t. 930, et Gen. & Sp. Orch. Pl. p. 192; Benth. et Hook. Gen. Plant. iii. p. 586.

About eighteen or twenty species in Tropical America, dispersed from Mexico to Bolivia, Brazil, and the West Indies.

1. **Notylia albida,** Kl. in Otto & Dietr. Allg. Gart. Zeit. 1851, p. 281; Walp. Ann. vi. p. 674; Rchb. f. Beitr. Orch. Centr.-Am. p. 12; Bot. Mag. t. 6311.

GUATEMALA (*Warscewicz*).

2. **Notylia barkeri,** Lindl. Bot. Reg. 1838, Misc. p. 90; Rchb. f. Xenia Orch. i. p. 47, et Walp. Ann. vi. p. 672.

MEXICO (*Barker* cult.). Hb. Kew.

3. **Notylia bicolor,** Lindl. in Benth. Pl. Hartw. p. 93; Rchb. f. Xenia Orch. i. p. 46, Walp. Ann. vi. p. 670, et Beitr. Orch. Centr.-Am. p. 68; Bot. Mag. t. 5609.

GUATEMALA, Comalapa (*Hartweg*), Las Nubes (*Wendland*), without locality (*Bernoulli*, 324; *Godman & Salvin*). Hb. Kew.

4. **Notylia bipartita,** Rchb. f. in Walp. Ann. vi. p. 672, et in Gard. Chron. n. s. xiv. p. 358.

MEXICO (*Kienast; Höge*).

5. **Notylia huegelii,** Fenzl, Denkschr. oester. Akad. i. p. 255; Walp. Ann. iii. p. 553, et vi. p. 673.

Notylia tridachne, Lindl. in Lindl. & Paxt. Fl. Gard. iii. p. 45.

Tridachne virens, Liebm. ex Lindl. loc. cit.

SOUTH MEXICO, near Jalapa.

6. **Notylia multiflora,** Hook. Lond. Journ. Bot. iii. p. 315, t. 10; Walp. Ann. vi. p. 674.

MEXICO?

7. **Notylia orbicularis,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 26; Walp. Ann. vi. p. 675.

MEXICO (*Galeotti*).

8. **Notylia pentachne,** Rchb. f. in Bonplandia, 1854, p. 90, Xenia Orch. i. p. 50, t. 20, et Walp. Ann. vi. p. 675.

PANAMA, Veraguas (*Behr*), Chagres (*Fendler*, 438). Hb. Kew.

9. **Notylia trisepala,** Lindl. in Lindl. & Paxt. Fl. Gard. iii. p. 45; Rchb. f. Xenia Orch. i. p. 49, Walp. Ann. vi. p. 675, et Beitr. Orch. Centr.-Am. p. 69.

COSTA RICA, Rio Sucio (*Wendland*).

Tribe III. NEOTTIEÆ.

Neottieæ, Benth. et Hook. Gen. Plant. iii. pp. 463 et 480.

87. VANILLA.

Vanilla, Swartz, in Nov. Act. Soc. Sc. Upsala, vi. p. 66, t. 5; Benth. et Hook. Gen. Plant. iii. p. 590.

This genus comprises about twenty species, widely dispersed in Tropical Asia, Africa, and America.

1. **Vanilla inodora**, Schiede in Linnæa, iv. p. 574; Lindl. Gen. & Sp. Orch. Pl. p. 437.

South Mexico, Misantla (*Schiede*), Mirador (*Liebmann*, 297). Hb. Kew.

2. **Vanilla planifolia**, Andrews, Bot. Rep. t. 538; R. Br. in Ait. Hort. Kew. ed. 2, v. p. 220; Bauer, Ill. Gen. Orch. tt. 10 et 11; Lindl. Gen. & Sp. Orch. Pl. p. 435; Griseb. Fl. Brit. W. Ind. p. 638; Berg & Schmidt, Offiz. Gewächs. t. 23 *a* et *b*.
Myrobroma fragrans, Salisb. Parad. Lond. t. 82.

Mexico (ex *Grisebach*).—West Indies and Colombia to Brazil.

3. **Vanilla pompona**, Schiede in Linnæa, iv. p. 573; Rchb. f. Beitr. Orch. Centr.-Am. p. 47, et in Seem. Bot. Voy. 'Herald,' p. 214.

South Mexico, Papantla and Colipa (*Schiede*), valley of Cordova (*Bourgeau*, 2332); Nicaragua, Segovia (*Ærsted*); Panama (*Seemann*)? Hb. Kew.

4. **Vanilla sativa**, Schiede in Linnæa, iv. p. 573; Lindl. Gen. & Sp. Orch. Pl. p. 437.

South Mexico, Papantla, Misantla, and Colipa (*Schiede*).

5. **Vanilla sylvestris**, Schiede in Linnæa, iv. p. 573; Lindl. Gen. & Sp. Orch. Pl. p. 437.

South Mexico, Papantla, Nantla, and Colipa (*Schiede*).

88. SOBRALIA.

Sobralia, Ruiz et Pav. Prodr. Fl. Peruv. et Chil. p. 120, t. 26; Benth. et Hook. Gen. Plant. iii. p. 590.

An exclusively Tropical-American genus, containing about thirty species, extending from Mexico to Peru and Guiana, but not, apparently, to the West Indies.

1. **Sobralia bletiæ**, Rchb. f. in Bot. Zeit. 1852, p. 713, Xenia Orch. i. p. 76, t. 30, et Beitr. Orch. Centr.-Am. p. 6; Lindl. Fol. Orch. n. 11.

Panama, around the town of David (*Warscewicz*).

2. **Sobralia decora,** Batem. Orch. Mex. & Guat. t. 26; Lindl. Fol. Orch. n. 20; Rchb. f. Xenia Orch. i. p. 77, t. 30.

Sobralia sessilis, Hook. Bot. Mag. t. 4570, icon in Lemaire, Jard. Fleur. t. 104 (mutuata); Rchb. f. in Fl. des Serres, viii. p. 247.

GUATEMALA (*Skinner*). Hb. Kew.

3. **Sobralia fenzliana,** Rchb. f. in Bot. Zeit. 1852, p. 714, et Beitr. Orch. Centr.-Am. pp. 9 et 47; Lindl. Fol. Orch. n. 18.

NICARAGUA, Segovia (*Œrsted*); PANAMA, Volcan de Chiriqui 1000 to 2000 feet (*Warscewicz*). Hb. Kew.

Specimens in Kew Herbarium from Veraguas (*Seemann*, 1160) and Frijoli railway station (*S. Hayes*, 493) may belong to this species.

4. **Sobralia galeottiana,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 30; Lindl. Fol. Orch. n. 15.

SOUTH MEXICO, Oaxaca at 4000 feet (*Galeotti*, 3317).—GUIANA. Hb. Kew.

Concerning this species Dr. Reichenbach (Beitr. Orch. Centr.-Am. p. 8) has the following note:—"Quæ sit *Sobralia galeottiana*, A. Rich., ego nescio. Specimina no. 5286 quæ ill. b. amicus Lindley affert in *Folia sobralia*, no. 15, ego nunc ipse possideo ex herbario Galleottiano, cujus Orchideas omnes habeo. Est planta peregregia, prope Talea Oaxacæ lecta, a *Sobralia macrantha* longe diversa, *Sobraliæ klotzschianæ*, Rchb. f., et *S. fimbriatæ*, Pœpp. et Endl., admodum similis bracteis abbreviatis vaginisque setiferis. Pertinet ad sequentem sectionem. Specimina contra, quæ affert cl. Lindley sub Galeotti 5317 bene novi et ipse plura possideo. Hæc sine ullo dubio pertinent ad *Sobraliam decoram*, Batem. Inde vix est dubitandum, omnem *Sobraliam galleottianam* esse synonymum *Sobraliæ decoræ*, Batem., quam se non cognovisse ill. beatus amicus Lindley, l. c., ipse confessus est."

5. **Sobralia labiata,** Warsc. et Rchb. f. in Bot. Zeit. 1852, p. 714, Fl. des Serres, viii. p. 247, et Beitr. Orch. Centr.-Am. p. 7; Lindl. Fol. Orch. n. 7.

PANAMA, Chiriqui (*Warscewicz*). Hb. Kew.

6. **Sobralia lepida,** Rchb. f. Beitr. Orch. Centr.-Am. p. 68, et Xenia Orch. ii. p. 177, t. 176.

COSTA RICA, Desengaño (*Warscewicz*).

7. **Sobralia leucoxantha,** Rchb. f. Beitr. Orch. Centr.-Am. p. 68.

COSTA RICA, Desengaño (*Wendland*).

8. **Sobralia lindleyana,** Rchb. f. in Bot. Zeit. 1852, p. 713, Beitr. Orch. Centr.-Am. pp. 6 et 68, et Xenia Orch. ii. p. 156, t. 163: Lindl. Fol. Orch. n. 10.

COSTA RICA, Desengaño (*Wendland*); PANAMA, Volcan de Chiriqui at 9000 feet (*Warscewicz*). Hb. Kew.

9. **Sobralia macrantha,** Lindl. Sert. Orch. sub t. 29, Gen. & Sp. Orch. Pl. p. 431, et Fol. Orch. n. 22; Batem. Orch. Mex. & Guat. t. 37; Bot. Mag. t. 4446; Fl. des Serres, t. 669; Rchb. f. Beitr. Orch. Centr.-Am. p. 8, t. 1.

South Mexico, Zacuapan (*Leibold*), Mirador (*Sartorius*), Orizaba (*Botteri*, 1016, 1046), Talea (*Jurgensen*, 596, 699), Chiapas (*Ghiesbreght*, 770), Vera Cruz (*Galeotti*, 5062, 5274), Hacienda de la Laguna (*Schiede*), Hacienda del Carmen (*Hartweg*); Guatemala (*Skinner; Warscewicz*), Barranca Honda (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 365). Hb. Kew.

10. **Sobralia macrophylla,** Rchb. f. in Bot. Zeit. 1852, p. 713, Beitr. Orch. Centr.-Am. p. 5, et Xenia Orch. i. p. 218, t. 90; Lindl. Fol. Orch. n. 23.

Sobralia chlorantha, Hook. Bot. Mag. t. 4682, ic. in Fl. des Serres, t. 840, iterata.

Panama, Volcan de Chiriqui (*Warscewicz*).

11. **Sobralia roseo-alba,** Rchb. f. Beitr. Orch. Centr.-Am. p. 7.

Central America, without locality (*Warscewicz*).

12. **Sobralia suaveolens,** Rchb. f. in Gard. Chron. n. s. ix. p. 622.

Panama, Colon (*Stanger*).

13. **Sobralia warscewiczii,** Rchb. f. in Bot. Zeit. 1852, p. 714, et Beitr. Orch. Centr.-Am. p. 9, t. 1; Lindl. Fol. Orch. n. 17.

Panama, Volcan de Chiriqui at 6000 feet (*Warscewicz*).

14. **Sobralia,** sp.

Nicaragua, Chontales (*Seemann*, 176). Hb. Kew.

89. FREGEA.

Fregea, Rchb. f. in Bot. Zeit. 1852, p. 712; Benth. et Hook. Gen. Plant. iii. p. 590, sub *Sobralia.*

Monotype.

1. **Fregea amabilis,** Rchb. f. in Bot. Zeit. 1852, p. 712, et Beitr. Orch. Centr.-Am. p. 10, t. 2.

Panama, Cordillera of Chiriqui (*Warscewicz*).

90. CORYMBIS.

Corymbis, Thouars, Orch. Iles Afr. t. 37; Benth. et Hook. Gen. Plant. iii. p. 591.
Chloidia, Lindl. Gen. & Sp. Orch. Pl. p. 484.

A genus of about six or seven known species widely dispersed in the tropics of both hemispheres.

1. **Corymbis flava,** Hemsley.

Chloidia flava, Rchb. f. in Walp. Ann. vi. p. 644, et Beitr. Orch. Centr.-Am. p. 5; Griseb. Fl. Brit. W. Ind. p. 643.

South Mexico, Mirador (*Liebmann*, 13, 15, 16); Panama, Volcan de Chiriqui at 6000 feet (*Warscewicz*)?—Jamaica; Cuba. Hb. Kew.

2. **Corymbis,** sp.?

Panama, Chagres (*Fendler*, 441). Hb. Kew.

91. CRANICHIS.

Cranichis, Swartz in K. Vetensk. Akad. Nya Handl. Stockh. xxi. p. 226; Benth. et Hook. Gen. Plant. iii. p. 593.

Ocampoa, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 31?

About twenty species, inhabiting America, from Mexico to Peru, and the West Indies.

1. **Cranichis apiculata,** Lindl. in Benth. Pl. Hartw. p. 92.

Guatemala, between Dueñas and Acatenango (*Hartweg*). Hb. Kew.

2. **Cranichis ciliata,** Kunth, Synop. i. p. 324; Lindl. Gen. & Sp. Orch. Pl. p. 451; Rchb. f. Beitr. Orch. Centr.-Am. p. 62.

Ophrys ciliata, H. B. K. Nov. Gen. et Sp. i. p. 334, t. 74.

Guatemala, Las Nubes (*Wendland*).—Colombia to Bolivia.

3. **Cranichis glandulosa,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 30.

Mexico (*Galeotti*).

4. **Cranichis muscosa,** Swartz, Prodr. Fl. Ind. Occ. p. 120, et Fl. Ind. Occ. p. 1429, t. 29; Rchb. f. Beitr. Orch. Centr.-Am. p. 46; Lindl. Gen. & Sp. Orch. Pl. p. 451.

Costa Rica, Aguacate (*Ærsted*).—Cuba to Trinidad.

5. **Cranichis reticulata,** Rchb. f. Beitr. Orch. Centr.-Am. p. 62.

Costa Rica, Desengaño (*Wendland*).

6. **Cranichis schaffneri,** Rchb. f. in Bonplandia, 1855, p. 238.

South Mexico, Belen (*Schaffner*), valley of Mexico (*Bourgeau*, 748). Hb. Kew.

7. **Cranichis speciosa,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 5; Lindl. Gen. & Sp. Orch. Pl. p. 448.

South Mexico, near Valladolid (*La Llave*).

8. **Cranichis sylvatica,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 30.

South Mexico, Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 5143)? Hb. Kew.

9. **Cranichis subumbellata,** A. Rich. et Gal. Ann. Sc. Nat. série 3, iii. p. 30.

Mexico (*Galeotti*).

10. **Cranichis tubulosa,** Lindl. Gen. & Sp. Orch. Pl. p. 451.

MEXICO (*Galeotti*).

11. **Cranichis tubularis,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 6; Lindl. Gen. & Sp. Orch. Pl. p. 448.

SOUTH MEXICO, Cañada del Rincon, near Vallisoletum (*La Llave*).

Lindley, *l. c.*, suggests that this and *C. speciosa* of the same authors may belong to *Stenoptera*, a genus of which no species is known within our limits.

12. **Cranichis,** sp.

GUATEMALA, Volcan de Fuego at 5000 feet (*Salvin*, 3). Hb. Kew.

13. **Cranichis,** sp.?

GUATEMALA, Coban (*Godman & Salvin*, 188 *a*). Hb. Kew.

14. **Cranichis,** sp.?

GUATEMALA, Volcan de Fuego (*Godman & Salvin*, 188). Hb. Kew.

15. **Cranichis,** sp.

GUATEMALA, Barranca Honda at 3800 feet (*Salvin*, 4). Hb. Kew.

16. **Cranichis,** sp.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 157), Sierra San Pedro Nolasco, Talea, &c. (*Jurgensen*, 568). Hb. Kew.

17. **Cranichis,** sp. (*C. schaffneri*, Rchb. f.?)

SOUTH MEXICO, Zimapan (*Coulter*, 1528). Hb. Kew.

92. PRESCOTTIA.

Prescottia, Lindl. in Hook. Exot. Fl. t. 115 (errore *Prescotia*); Benth. et Hook. Gen. Plant. iii. p. 593.

Galeoglossum, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 31.

An exclusively American genus of about twenty species, ranging from Mexico and the West Indies to Brazil.

1. **Prescottia colorans,** Lindl. Bot. Reg. t. 1915, et Gen. & Sp. Orch. Pl. p. 454; Rchb. f. Beitr. Orch. Centr.-Am. p. 62.

GUATEMALA, Las Nubes (*Wendland*); COSTA RICA, Volcan de Barba at 9000 feet (*Wendland*). Hb. Kew.

Originally recorded as having been imported by Messrs. Loddiges from Brazil.

2. **Prescottia galeottii,** Rchb. f. in Linnæa, xix. p. 377, et Walp. Ann. i. p. 806.

Galeoglossum prescottioides, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 31.

SOUTH MEXICO, Oaxaca 4500 feet (*Galeotti*, 5011). Hb. Kew.

3. **Prescottia lindeniana,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 31.

MEXICO (*Linden*).

4. **Prescottia orchioides,** Lindl. in Ann. Nat. Hist. xv. p. 386.
South Mexico, Bolaños (*Hartweg*).

5. **Prescottia pachyrhiza,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 31.
Mexico (*Galeotti*).

6. **Prescottia,** sp.
Nicaragua, Chontales (*Tate*). Hb. Kew.

7. **Prescottia,** sp.
South Mexico, Orizaba (*Müller*, 744). Hb. Kew.

93. PONTHIEVA.

Ponthieva, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 199; Benth. et Hook. Gen. Plant. iii. p. 593.

A genus of about ten published species, inhabiting America, from North Carolina through the West Indies and Mexico to Bolivia.

1. **Ponthieva ephippium,** Rchb. f. in Linnæa, xxviii. p. 382.
South Mexico (*Schaffner*).

2. **Ponthieva glandulosa,** R. Br. in Ait. Hort. Kew. ed. 2, v. p. 200; Lindl. Gen. & Sp. Orch. Pl. p. 444; Rchb. f. Beitr. Orch. Centr.-Am. p. 46.
Neottia glandulosa, Sims, Bot. Mag. t. 842.
North Carolina to Florida and the West Indies.—Mexico, Mirador (*Sartorius*), San Cornelio (*Hartweg*); Costa Rica, Cartago (*Ærsted*).—Ecuador? Hb. Kew.

3. **Ponthieva guatemalensis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 63.
Guatemala, in a ravine near the city of Guatemala (*Wendland*).

4. **Ponthieva oblongifolia,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 30.
Mexico (*Galeotti*).

5. **Ponthieva,** sp. (*P. guatemalensis*, Rchb. f.?)
Guatemala (*Türckheim*). Hb. Kew.

6. **Ponthieva,** sp.
South Mexico, Orizaba (*Müller*, 452). Hb. Kew.

94. PSEUDOCENTRUM.

Pseudocentrum, Lindl. in Journ. Linn. Soc. Lond. iii. p. 63; Benth. et Hook. Gen. Plant. iii. p. 594.

Of this genus there are five published species, and they inhabit Central America, the Andes, and Jamaica.

1. **Pseudocentrum hoffmanni,** Rchb. f. in Linnæa, xli. p. 53.
Pelexia hoffmanni, Rchb. f. Beitr. Orch. Centr.-Am. p. 102.
Costa Rica, Volcan de Barba (*Hoffmann*).

95. SPIRANTHES.

Spiranthes, L. C. Rich. in Mém. Mus. Par. iv. p. 50; Benth. et Hook. Gen. Plant. iii. p. 596.

A genus of about eighty described species, very widely spread in temperate and tropical regions.

1. **Spiranthes aguacatensis,** Rchb. f. in Bonplandia, 1855, p. 214, et Beitr. Orch. Centr.-Am. p. 46.

Costa Rica, Aguacate (*Œrsted*).

2. **Spiranthes assurgens,** Rchb. f. Beitr. Orch. Centr.-Am. p. 66.

Guatemala, Oratoria (*Wendland*).

3. **Spiranthes aurantiacus,** Hemsley.

Stenorrhynchus aurantiacus, Lindl. Gen. & Sp. Orch. Pl. p. 479; Benth. Pl. Hartw. p. 92.
Neottia aurantiaca, Llav. et Lex. Nov. Veg. Descr. ii., Orchid. Opusc. p. 2.

South Mexico, region of Orizaba (*Bourgeau*, 3012; *Müller*, 230), Totontepec (*Hartweg*), Zimapan (*Coulter*, 1525); Guatemala, in pastures of San Lucas, Chimaltenango, Tejas, and elsewhere (*Hartweg*, 622), without locality (*Skinner*). Hb. Kew.

4. **Spiranthes chloræformis,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 33.

South Mexico, Oaxaca at 6000 feet (*Galeotti*, 5008). Hb. Kew.

5. **Spiranthes cinnabarinus,** Hemsley.

Stenorrhynchus cinnabarinus, Lindl. Gen. & Sp. Orch. Pl. p. 479; Bot. Reg. 1847, t. 65.
Neottia cinnabarina, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 3.

South Mexico, mountains of Irapæa and elsewhere (*La Llave*), Sierra San Pedro Nolasco, Talea, &c. (*Jurgensen*, 665), Chiapas (*Ghiesbreght*, 767), without locality (*Schaffner*). Hb. Kew.

6. **Spiranthes comosa,** Rchb. f. in Linnæa, xviii. p. 408.

Mexico (*Liebold*).

7. **Spiranthes colorans,** N. E. Br. in Gard. Chron. n. s. xix. p. 210.

Stenorrhynchus speciosus, Rich. Ann. Orch. Eur. p. 37; Lindl. Gen. & Sp. Orch. Pl. p. 477; Rchb. f. Beitr. Orch. Centr.-Am. pp. 46 et 65.
Neottia speciosa, Jacq. Ic. Pl. Rar. iii. t. 600; Hook. Exot. Fl. tt. 3 et 4; Bot. Mag. t. 1374.
Ibidium speciosum, Salisb. in Trans. Hort. Soc. Lond. i. p. 291.

South Mexico, Mirador (*Liebmann*, 490 *b*), Cordillera of Oaxaca (*Galeotti*, 5190), valley of Cordova (*Bourgeau*, 2080); Guatemala, Las Nubes (*Wendland*); Costa Rica, Cartago (*Œrsted*); Panama, Veraguas (*Bridges*). — Colombia; Venezuela; Cuba; Jamaica. Hb. Kew.

8. **Spiranthes costaricensis,** Rchb. f. in Bonplandia, 1855, p. 214, Beitr. Orch. Centr.-Am. pp. 46 et 102, et Xenia Orch. ii. p. 185, t. 179.

Costa Rica, Naranjo (*Œrsted; Hoffmann*).

9. **Spiranthes ensifolia,** Rchb. f. in Bonplandia, 1856, p. 211.
CENTRAL AMERICA?

10. **Spiranthes funckiana,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 32.
MEXICO (*Galeotti*).

11. **Spiranthes galeottiana,** A. Rich. in Ann. Sc. Nat. série 3, iii. p. 32.
SOUTH MEXICO, Chinantla, Oaxaca (*Galeotti*, 5011 bis). Hb. Kew.

12. **Spiranthes graminea,** Lindl. in Benth. Pl. Hartw. p. 25.
SOUTH MEXICO, Lagos (*Hartweg*). Hb. Kew.

13. **Spiranthes gutturosa,** Rchb. f. in Beitr. Orch. Centr.-Am. p. 67, et Xenia Orch. ii. p. 187, t. 179.
SALVADOR, San Vincente (*Wendland*).

14. **Spiranthes hemichrea,** Lindl. Gen. & Sp. Orch. Pl. p. 473; Rchb. f. Beitr. Orch. Centr.-Am. pp. 47 et 65.
GUATEMALA, without locality (*Skinner*), Las Nubes (*Wendland*); NICARAGUA, Segovia (*Ærsted*). Hb. Kew.

15. **Spiranthes llaveana,** Lindl. in Benth. Pl. Hartw. p. 72.
Neottia micrantha, Llav. et Lex. Nov. Veg. Descr. ii., Orchid. Opusc. p. 5.
SOUTH MEXICO, Totontepec (*Hartweg*). Hb. Kew.

16. **Spiranthes longepetiolata,** Rchb. f. Beitr. Orch. Centr.-Am. p. 67.
COSTA RICA, Turrialba (*Wendland*).

17. **Spiranthes lupulina,** Hemsley.
Stenorrhynchus lupulinus, Lindl. Gen. & Sp. Orch. Pl. p. 479.
SOUTH MEXICO, Chapultepec (*Karwinski*); GUATEMALA (*Savage*). Hb. Kew.

18. **Spiranthes madrensis,** Hemsley.
Stenorrhynchus madrensis, Rchb. f. in Bonplandia, 1855, p. 177.
NORTH MEXICO, Sierra Madre (*Seemann*, 1958). Hb. Kew.

19. **Spiranthes mechoacana,** Hemsley.
Stenorrhynchus mechoacanus, Lindl. Gen. & Sp. Orch. Pl. p. 480.
Neottia michuacana, Llav. et Lex. Nov. Veg. Descr. ii., Orchid. Opusc. p. 3.
SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1004), Mirador (*Liebmann*, 137, 191, 202, 203, 205; *Sartorius*). Hb. Kew.

20. **Spiranthes montana,** Hemsley.
Stenorrhynchus montanus, Lindl. in Benth. Pl. Hartw. p. 95.
GUATEMALA, mountains of Dueñas (*Hartweg*), without locality (*Skinner*). Hb. Kew.

21. **Spiranthes orchioides,** Hemsley.
Stenorrhynchus orchioides, Rich. Ann. Orch. Eur. p. 37; Lindl. Gen. & Sp. Orch. Pl. p. 477.
Neottia orchioides, Swartz, Fl. Ind. Occ. p. 1411, t. 28; Bot. Mag. t. 1036.

Neottia squamulosa, H. B. K. Nov. Gen. et Sp. i. p. 332, t. 71.
Neottia plantaginea, Hook. Exot. Fl. t. 226.
Ibidium crystalligerum, Salisb. in Trans. Hort. Soc. Lond. i. p. 292.

South Mexico, Orizaba (*Müller*, 810), Oaxaca at 5000 to 7000 feet (*Galeotti*, 5052). —West Indies to Brazil. Hb. Kew.

22. **Spiranthes pauciflora,** Hemsley.

Stenorrhynchus pauciflorus, Rchb. f. in Bonplandia, 1856, p. 211.

Mexico.

23. **Spiranthes polyantha,** Rchb. f. in Linnæa, xviii. p. 408.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 857); South Mexico, Chapultepec (*Leibold*), valley of Mexico (*Bourgeau*, 242). Hb. Kew.

24. **Spiranthes prasophylla,** Rchb. f. Beitr. Orch. Centr.-Am. p. 65.

Guatemala, between Hacienda de Pantaleon and Zapote (*Wendland*).

25. **Spiranthes pyramidalis,** Lindl. Gen. & Sp. Orch. Pl. p. 473.

Guatemala, common (*Skinner*). Hb. Kew.

26. **Spiranthes ramentacea,** Lindl. in Ann. Nat. Hist. iv. p. 384, et Benth. Pl. Hartw. p. 53.

South Mexico, near Santa Barbara (*Hartweg*). Hb. Kew.

27. **Spiranthes saccata,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 32.

Mexico (*Galeotti*).

28. **Spiranthes sceptrodes,** Rchb. f. in Bonplandia, 1855, p. 214, et Beitr. Orch. Centr.-Am. pp. 46 et 65.

Guatemala, Oratoria (*Wendland*); Nicaragua, Segovia (*Œrsted*).

29. **Spiranthes schaffneri,** Rchb. f. in Linnæa, xxviii. p. 382.

South Mexico (*Schaffner*).

30. **Spiranthes smithii,** Rchb. f. in Gard. Chron. 1868, p. 842.

Costa Rica, Cartago (*Smith*).

31. **Spiranthes sulphurea,** Hemsley.

Stenorrhynchus sulphureus, Lindl. Gen. & Sp. Orch. Pl. p. 478.
Neottia sulphurea, Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 4.

South Mexico, in the province of Michoacan near Valladolid, and especially towards Jesus del Monte (*La Llave*).

32. **Spiranthes thelymitra,** Rchb. f. Beitr. Orch. Centr.-Am. p. 66.

Guatemala, near Oratoria &c. (*Wendland*).

33. **Spiranthes trilineata,** Lindl. in Benth. Pl. Hartw. p. 94; Rchb. f. Beitr. Orch. Centr.-Am. p. 66.

Guatemala, plain of Guatemala (*Hartweg; Skinner*), Hacienda de Naranjo (*Wendland*). Hb. Kew.

96. PELEXIA.

Pelexia, Lindl. Gen. & Sp. Orch. Pl. p. 482, *quoad species calcaratas*; Benth. et Hook. Gen. Plant. iii. p. 597.

About seven or eight species, inhabiting Tropical America, from Central America? and the West Indies to Brazil.

1. **Pelexia**, sp. ?

NICARAGUA, Chontales (*Tate*, 313). Hb. Kew.

97. PHYSURUS.

Physurus, L. C. Rich. in Mém. Mus. Par. iv. p. 55, *nomen*; Benth. et Hook. Gen. Plant. iii. p. 597.

A genus of about twenty described species, inhabiting Tropical Asia and America.

1. **Physurus calophyllus**, Rchb. f. Beitr. Orch. Centr.-Am. p. 64.

COSTA RICA, Costa de Congo (*Wendland*).

2. **Physurus claviger**, Rchb. f. in Bonplandia, 1856, p. 211.

NEW SPAIN (hb. *Pavon*).

3. **Physurus loxoglottis**, Rchb. f. Beitr. Orch. Centr.-Am. p. 64, et Xenia Orch. ii. p. 182, t. 178.

GUATEMALA, ravine near the city of Guatemala (*Wendland*).

4. **Physurus tridax**, Rchb. f. Beitr. Orch. Centr.-Am. p. 64, et Xenia Orch. ii. p. 182, t. 178.

COSTA RICA, Desengaño (*Wendland*).

5. **Physurus vaginatus**, Hook. Ic. Pl. t. 449.

GUATEMALA (*Skinner*); NICARAGUA (*Tate*). Hb. Kew.

6. **Physurus vesicifer**, Rchb. f. Beitr. Orch. Centr.-Am. p. 63.

COSTA RICA, Volcan de Barba at 9000 feet (*Wendland*).

98. GOODYERA.

Goodyera, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 197; Benth. & Hook. Gen. Plant. iii. p. 602.

This genus is represented in Europe, Madeira, Temperate and Tropical Asia, North America, New Caledonia, and the Mascarene Islands. About twenty-five species are known.

1. **Goodyera striata**, Rchb. f. in Linnæa, xviii. p. 409.

Physurus brachyceras, A. Rich. et Gal. in Ann. Sc. Nat. sér. 3, iii. p. 33.

SOUTH MEXICO, Oaxaca at 4000 feet (*Galeotti*, 5237), without locality (*Leibold*). Hb. Kew.

99. ARETHUSA.

Arethusa, Linn. Gen. Plant. n. 1014; Benth. et Hook. Gen. Plant. iii. p. 614.

A genus of three described species, whereof one is a native of Japan, one of eastern North America, and the third of Mexico and Guatemala.

1. **Arethusa rosea,** Benth. in Journ. Linn. Soc. Lond. xviii. p. 348.

Crybe rosea, Lindl. Gen. & Sp. Orch. Pl. p. 425; Bot. Reg. t. 1872; Rchb. f. Beitr. Orch. Centr.-Am. pp. 11 et 68.

Bletia purpurata, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 23, ex Rchb. f. in Walp. Ann. vi. p. 445.

Mexico (*Galeotti*); Guatemala, ravines (*Skinner; Warscewicz; Wendland*). Hb. Kew.

100. POGONIA.

Pogonia, Juss. Gen. Plant. p. 65; Benth. et Hook. Gen. Plant. iii. p. 615.

Upwards of thirty species of this genus have been described, and they are very widely diffused in both hemispheres.

1. **Pogonia rosea,** Hemsley.

Cleistes rosea, Lindl. Gen. & Sp. Orch. Pl. p. 410; Griseb. Fl. Brit. W. Ind. p. 636.

Panama (*Duchassaing*).—Colombia to Guiana and in the West Indies.

2. **Pogonia,** sp. ?

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*). Hb. Kew.

101. EPIPACTIS.

Epipactis, R. Br. in Ait. Hort. Kew. ed. 2, v. p. 201, pro parte; Benth. et Hook. Gen. Plant. iii. p. 619.

Ten species have been published, and they are generally diffused in Temperate Europe, Asia, and North America.

1. **Epipactis gigantea,** Dougl. in Hook. Fl. Bor.-Am. ii. p. 202, t. 202; Wats. Bot. Calif. ii. p. 137.

Epipactis americana, Lindl. in Ann. Nat. Hist. iv. p. 385, et Gen. & Sp. Orch. Pl. p. 462.

From Washington Territory to California and Western Texas.—South Mexico, at the falls of the Rio del Salto (*Hartweg*). Hb. Kew.

Tribe IV. OPHRYDEÆ.

Ophrydeæ, Benth. et Hook. Gen. Plant. iii. pp. 464 et 485.

102. HABENARIA.

Habenaria, Willd. Sp. Plant. iv. p. 44; Benth. et Hook. Gen. Plant. iii. p. 624.

As restricted by Bentham and Hooker, this is the most widely diffused genus of

Orchids, having nearly the same range as the order; and it is the most numerous in species among terrestrial genera, numbering nearly 400 species.

1. **Habenaria clypeata,** Lindl. Gen. & Sp. Orch. Pl. p. 311, et in Benth. Pl. Hartw. pp. 52 et 53.

South Mexico, Michoacan and Uruapan (*Galeotti*, 5218, 5219), Cordillera of Vera Cruz (*Galeotti*, 5151), Anganguio (*Hartweg*), between Totutla and Huatusco (*Liebmann*, 144), region of Orizaba (*Hahn*, 2872); Guatemala, between Casillas and Laguna de Ayarces (*Bernoulli*, 706). Hb. Kew.

2. **Habenaria crassicornis,** Lindl. Gen. & Sp. Orch. Pl. p. 311.

South Mexico, Mineral del Monte (*Schiede*), without locality (*Karwinski*). Hb. Kew.

3. **Habenaria diffusa,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 28.

South Mexico, Mirador (*Galeotti*, 7263; *Sartorius; Liebmann*, 145, 146); Guatemala, Volcan de Fuego, 5000 feet (*Salvin*). Hb. Kew.

4. **Habenaria entomantha,** Lindl. Gen. & Sp. Orch. Pl. p. 311.

Orchis entomantha, Llav. et Lex. Nov. Veg. Descr. ii., Orchid. Opusc. p. 8.

South Mexico, near Valladolid (*La Llave*), without locality (*Karwinski*), Totutla, Vera Cruz (*Liebmann*, 157, 160, 247). Hb. Kew.

5. **Habenaria flexuosa,** Lindl. Gen. & Sp. Orch. Pl. p. 311.

South Mexico, San Pedro, Oaxaca (*Karwinski*), Orizaba (*Botteri*, 234). Hb. Kew.

6. **Habenaria ghiesbreghtiana,** Hemsley.

Platanthera ghiesbreghtiana, A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 30.

South Mexico, without locality (*Schaffner*). Hb. Kew.

7. **Habenaria lactiflora,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 28.

South Mexico, region of Orizaba (*Hahn*). Hb. Kew.

Var. **buccalis,** Rchb. f. Beitr. Orch. Centr.-Am. p. 61.

Costa Rica, Alahuela to Desengaño (*Wendland*).

8. **Habenaria leucostachys,** S. Watson in Bot. Calif. ii. p. 134.

Platanthera leucostachys, Lindl. Gen. & Sp. Orch. Pl. p. 288.

British Territory, southward on the western side of the continent to California and Arizona.—North Mexico, Santa Cruz, Sonora (*Thurber*).

9. **Habenaria limosa,** Hemsley.

Platanthera limosa, Lindl. in Ann. Nat. Hist. iv. p. 381.

South Mexico, Anganguio (*Hartweg*). Hb. Kew.

10. **Habenaria macroceratitis,** Willd. Sp. Pl. iv. p. 44; Rchb. f. Beitr. Orch. Centr.-Am. p. 102.

Habenaria macroceras, Spreng. Syst. Veg. iii. p. 692; Bot. Mag. t. 2947.

Orchis habenaria, Linn. Sp. Pl. ed. 2, p. 1331.

Costa Rica (*Hoffmann*).—Jamaica.

11. **Habenaria maxillaris,** Lindl. in Hook. Journ. Bot. i. p. 5, et Gen. & Sp. Orch. Pl. p. 310 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 61.

Platanthera foliosa, Brongn. in Duperr. Voy. 'Coquille,' Bot. Phanerog. p. 194, t. 38.

Guatemala, Dueñas (*Wendland*).—Colombia ; Peru.

Reichenbach (*l. c.*) says :—"Num vere huc pertineat *Platanthera foliosa*, Brongn., ego nescio."

12. **Habenaria novemfida,** Lindl. in Benth. Pl. Hartw. p. 94.

Guatemala, ravines (*Hartweg*). Hb. Kew.

13. **Habenaria odontopetala,** Rchb. f. in Linnæa, xviii. p. 407.

South Mexico, Mirador (*Liebmann*, 234 ; *Sartorius*), temperate Mexico (*Leibold*). Hb. Kew.

14. **Habenaria œrstedii,** Rchb. f. in Bonplandia, 1855, p. 212, et Beitr. Orch. Centr.-Am. p. 45.

Nicaragua, Segovia (*Œrsted*). Hb. Kew.

15. **Habenaria petalodes,** Lindl. Gen. & Sp. Orch. Pl. p. 316 ; Rchb. f. Beitr. Orch. Centr.-Am. p. 5 (var. *micrantha*).

Panama (*Warscewicz*).—Brazil.

16. **Habenaria repens,** Nutt. Gen. N. Am. Pl. ii. p. 190 ; Chapm. Fl. Southern U. States, p. 461.

Carolina to Florida and Georgia.—Guatemala, Dueñas, 4950 feet (*Salvin*).—Cuba. Hb. Kew.

17. **Habenaria setifera,** Lindl. in Ann. Nat. Hist. iv. p. 381; Rchb. f. in Linnæa, xviii. p. 407.

South Mexico (*Hartweg ; Leibold*). Hb. Kew.

18. **Habenaria spathacea,** A. Rich. et Gal. in Ann. Sc. Nat. série 3, iii. p. 29.

Mexico (*Galeotti*).

19. **Habenaria strictissima,** Rchb. f. in Linnæa, xviii. p. 407.

Habenaria pyramidalis, Lindl.

South Mexico, Bolaños (*Hartweg*), without locality (*Coulter*, 1524), temperate Mexico (*Leibold*). Hb. Kew.

20. **Habenaria triptera,** Rchb. f. in Linnæa, xxii. p. 814.

South Mexico, Mirador (*Sartorius*), Mesa Chica (*Schiede*), Zacuapan (*Leibold*). Hb. Kew.

21. **Habenaria vulcanica,** Hemsley.

Platanthera vulcanica, Lindl. in Ann. Nat. Hist. iv. p. 381.

South Mexico, Real del Monte (*Hartweg*), peak of Orizaba, 10,000 to 12,000 feet

(*Liebmann*, 141, 235, 242, 244), Cordillera of Oaxaca at 11,000 feet (*Galeotti*, 5191). Hb. Kew.

22. **Habenaria,** sp.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 538). Hb. Kew.

23. **Habenaria,** sp.

North Mexico, Sierra Madre (*Seemann*, 1956); South Mexico, Zimapan (*Coulter*, 1524). Hb. Kew.

24. **Habenaria,** sp.

South Mexico, region of Orizaba (*Botteri*, 233; *Müller*, 1572). Hb. Kew.

Tribe V. CYPRIPEDIEÆ.

Cypripedieæ, Benth. et Hook. Gen. Plant. iii. pp. 464 et 487.

103. CYPRIPEDIUM.

Cypripedium, Linn. Gen. Plant. n. 1015; Benth. et Hook. Gen. Plant. iii. p. 634.

Of this genus upwards of forty species have been published; and they are widely spread in Europe, Temperate and Tropical Asia, and North America, from the Arctic regions to Guatemala.

1. **Cypripedium irapeanum,** Llav. et Lex. Nov. Veg. Descr. ii., Orch. Opusc. p. 10; Lindl. Gen. & Sp. Orch. Pl. p. 528; Bot. Reg. 1846, p. 58.
Cypripedium molle, Lindl. in Benth. Pl. Hartw. p. 72.
Cypripedium lexarzæ, Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1839, p. 265?
Cypripedium splendidum, Scheidw. l.c. p. 266?

South Mexico, Cordillera of Vera Cruz at 2500 feet (*Galeotti*, 5162), Zacuapan (*Linden*, 8), Chiapas (*Ghiesbreght*), between Chila and Huahuapan (*Andrieux*, 90); Guatemala, Volcan de Agua (*Hartweg*), without locality (*Skinner*). Hb. Kew.

104. SELENIPEDIUM.

Selenipedium, Rchb. f. Xenia Orch. i. p. 3; Benth. et Hook. Gen. Plant. iii. p. 635.

About ten species, inhabiting the mountains of South and Central America.

1. **Selenipedium caudatum,** Rchb. f. Xenia Orch. i. p. 3; Pescatorea, t. 24; Beitr. Orch. Centr.-Am. p. 44.
Selenipedium warscewiczianum, Rchb. f. Xenia Orch. i. p. 3.
Cypripedium caudatum, Lindl. Gen. & Sp. Orch. Pl. p. 531; Hook. Ic. Pl. t. ~~658~~ 659; Warner, Sel. Orch. ser. 2, t. 1.
Cypripedium warscewiczianum, Rchb. f. in Bot. Zeit. 1852, p. 692.

Panama, Volcan de Chiriqui (*Warscewicz*).—Colombia; Peru. Hb. Kew.

2. **Selenipedium chica,** Rchb. f. Xenia Orch. i. p. 3, t. 2.

Panama (*Duchassaing*). Hb. Kew.

3. **Selenipedium longifolium,** Rchb. f. et Warsc. Xenia Orch. i. p. 3, et Beitr. Orch. Centr.-Am. p. 44.

Cypripedium longifolium, Rchb. f. et Warsc. in Bot. Zeit. 1852, p. 690; Bot. Mag. t. 5970.

Costa Rica (*Endres*); Panama, Cordillera of Chiriqui at 5000 to 8000 feet (*Warscewicz*). Hb. Kew.

Series II. EPIGYNÆ.

Order CXLI. SCITAMINEÆ.

Scitamineæ, Benth. et Hook. Gen. Plant. iii. p. 636.

This Order is almost exclusively confined to tropical regions, where it is generally diffused. There are thirty-seven genera, comprising about 450 species.

Tribe I. ZINGIBEREÆ.

Zingibereæ, Benth. et Hook. Gen. Plant. iii. pp. 637 et 639.

Of the twenty-one genera belonging to this tribe only two are represented in America.

1. COSTUS.

Costus, Linn. Gen. Plant. n. 3; Benth. et Hook. Gen. Plant. iii. p. 646.

A genus of about twenty-five species, spread over Tropical Asia, Africa, America, and Australia.

1. **Costus hirsutus,** Presl, Reliq. Hænk. i. p. 112; Horan. Prodr. Monogr. Scit. p. 37.

Mexico (*Hænke*).

A specimen in Kew herbarium, named *C. spicatus*, Swartz, gathered in Yucatan or Tabasco (*E. P. Johnson*, 132), may be this species.

2. **Costus pictus,** D. Don, in Bot. Reg. t. 1594; Horan. Prodr. Monogr. Scit. p. 37.

Mexico (*Deppe*).

3. **Costus pulverulentus,** Presl, Reliq. Hænk. i. p. 111; Horan. Prodr. Monogr. Scit. p. 37.

Mexico (*Hænke*).

4. **Costus spicatus,** Swartz, Fl. Ind. Occ. p. 6; Rosc. Scit. t. 77; Horan. Prodr. Monogr. Scit. p. 37.

South Mexico, valley of Cordova (*Bourgeau*, 2098)? Hb. Kew.

Our plant may or may not be the true *C. spicatus*, which is accredited with a wide area of distribution in the West Indies and South America.

5. **Costus,** sp.

PANAMA, Chagres (*Fendler*, 447). Hb. Kew.

2. RENEALMIA.

Renealmia, Linn. f. Suppl. p. 7; Benth. et Hook. Gen. Plant. iii. p. 648.

With the exception of one species in West Tropical Africa, this genus is confined to Tropical America. About fifteen species are known.

1. **Renealmia racemosa,** Rosc. ex Griseb. Fl. Brit. W. Ind. p. 601.

Alpinia racemosa, Plum. Pl. Amer. i. t. 20?

Alpinia spicata, Presl, Reliq. Hænk. i. p. 109, syn. *A. presliana,* Steud. ex Horan. Prodr. Monogr. Scit. p. 34?

SOUTH MEXICO (*Hænke*).

As understood by Grisebach this species has a wide range.

2. **Renealmia ruiziana,** Horan. Prodr. Monogr. Scit. p. 33.

Amomum racemosum, Ruiz et Pav. Fl. Peruv. et Chil. t. i.

SOUTH MEXICO, Jalapa (*Galeotti*).—COLOMBIA to PERU. Hb. Kew.

3. **Renealmia,** sp.

NICARAGUA (*Tate*, 154, 410). Hb. Kew.

4. **Renealmia,** sp.

PANAMA, Chagres (*Fendler*, 445). Hb. Kew.

This is probably the *Alpinia strobilifera,* Pœpp. et Endl. Nov. Gen. et Sp. ii. p. 26, t. 136. Moritz collected the same plant in Maracaybo.

Tribe II. MARANTEÆ.

Maranteæ, Benth. et Hook. Gen. Plant. iii. pp. 638 et 649.

Ten genera are referred to this tribe, and they are generally dispersed in the Tropics, except, perhaps, Australia; but the species are not numerous in America.

3. ISCHNOSIPHON.

Ischnosiphon, Kœrnicke in Nouv. Mém. Soc. Imp. Nat. Mosc. xi. p. 346, tt. 10 et 11, et in Bull. Soc. ejusd. 1862, i. p. 80; Benth. et Hook. Gen. Plant. iii. p. 649.

An exclusively Tropical-American genus, of which thirteen species are enumerated.

1. **Ischnosiphon plurispicatus,** Kœrn. in Nouv. Mém. Soc. Imp. Nat. Mosc. xi. ex Horan. Prodr. Monogr. Scit. p. 11.

Calathea laxa, Pœpp. et Endl. Nov. Gen. et Sp. ii. t. 130?

PANAMA, Chagres (*Fendler*, 337).—TRINIDAD; GUIANA; BRAZIL. Hb. Kew.

4. MARANTA.

Maranta, Linn. Gen. Plant. n. 5; Benth. et Hook. Gen. Plant. iii. p. 649.

As limited by Bentham and Hooker, this is an exclusively Tropical-American genus of about ten described species.

1. **Maranta arundinacea,** Linn. Sp. Pl. ed. 1, p. 2; Bot. Mag. t. 2307; Horan. Prodr. Monogr. Scit. p. 9; Rosc. Scit. t. 25.

South Mexico, Mirador (*Linden*, 171), Jalapa 3000 feet (*Galeotti*, 4981), Teguisixtlan, Oaxaca (*Andrieux*, 83), Sierra San Pedro Nolasco &c. (*Jurgensen*, 801); Panama, near the city of Panama (*Seemann*, 306).—Widely spread in Tropical America and the West Indies, though probably often occurring only as an escape from, or the remains of, cultivation. Hb. Kew.

2. **Maranta gibba,** Sm. in Rees Cyclop. ex Rosc. Scit. t. 29; Horan. Prodr. Monogr. Scit. p. 9; Griseb. Fl. Brit. W. Ind. p. 605.

Mexico (ex *Grisebach*); Nicaragua, Chontales (*Seemann*, 171; *Tate*, 173).—Antigua and Barbados to Brazil. Hb. Kew.

3. **Maranta indica,** Tussac, Fl. Antill. i. t. 26; Desc. Fl. Antill. viii. t. 549; Griseb. Fl. Brit. W. Ind. p. 605.

Mexico (ex *Grisebach*).—West Indies; Venezuela.

4. **Maranta jacquini,** Rœm. et Schultes, Syst. Pl. i. p. 558; Horan. Prodr. Monogr. Scit. p. 9.

Maranta lutea, Jacq. Ic. Pl. Rar. ii. t. 201.

Mexico (ex *Horaninow*).—Venezuela to Brazil.

[*Phrynium warscewiczii*, Klotzsch in Otto and Dietr. Allg. Gart. Zeit. 1855, p. 89, from Central America, probably belongs to this genus.]

5. THALIA.

Thalia, Linn. Gen. Plant. n. 8; Benth. et Hook. Gen. Plant. iii. p. 650.

A genus of five described species, inhabiting Tropical America and the South-eastern States of North America, one recurring in Tropical Africa.

1. **Thalia geniculata,** Linn. Sp. Pl. p. 1193; Rosc. Scit. t. 45; Griseb. Fl. Brit. W. Ind. p. 605.

South Mexico (*Beechey*); Nicaragua, neighbourhood of Granada (*Lévy*, 85); Panama, Chagres (*Fendler*, 338), near the city of Panama (*Seemann*, 305).—Venezuela; Guiana; Brazil; West Indies. Hb. Kew.

6. CALATHEA.

Calathea, G. F. W. Mey. Prim. Fl. Esseq. p. 6; Benth. et Hook. Gen. Plant. iii. p. 653.

About sixty species of this genus have been recorded; two of them from Tropical Africa, and all the rest from Tropical America.

1. **Calathea,** sp. (aff. *C. guianensi*).

NICARAGUA, Chontales (*Tate*, 303, 409). Hb. Kew.

2. **Calathea,** sp.?

NICARAGUA (*Tate*, 408). Hb. Kew.

Tribe III. CANNEÆ.

Canneæ, Benth. et Hook. Gen. Plant. iii. pp. 639 et 654.

Limited to the genus *Canna*.

7. CANNA.

Canna, Linn. Gen. Plant. n. 1; Benth. et Hook. Gen. Plant. iii. p. 654.

A genus of barely thirty species, all of which are natives of Tropical and Subtropical America, and one of which is very widely spread in warm regions. Two or three others are also found here and there in the Old World, where, however, they may have been introduced. Horaninow (Prodr. Monogr. Scit.) enumerates sixty-six species, which, excluding a few doubtful ones, Regel (Ind. Sem. Hort. Bot. Petrop. 1866) reduces to twenty-five; but even these are very imperfectly represented in herbaria.

1. **Canna cinnabarina,** Bouché in Linnæa, xviii. p. 490; Horan. Prodr. Monogr. Scit. p. 16.

MEXICO.

Like many others proposed by the same author, this probably should rank no higher than a garden variety. The description is limited to the colours of the sepals, petals, and stamens.

2. **Canna glauca,** Linn. Sp. Pl. p. 1; Griseb. Fl. Brit. W. Ind. p. 603; Regel. Ind. Sem. Hort. Bot. Petrop. 1866, p. 84; Rosc. Scit. t. 7.

Canna mexicana, Bouché in Linnæa, viii. p. 158; Bot. Mag. t. 2302 (*Canna glauca, β. rufa*); Horan. Prodr. Monogr. Scit. p. 14.

MEXICO (ex *Bouché*).

3. **Canna heliconiæfolia,** Bouché in Linnæa, viii. p. 164; Horan. Prodr. Monogr. Scit. p. 17.

MEXICO (ex *Bouché*).

Described from a cultivated plant.

4. **Canna liliiflora,** Warsc. in Fl. des Serres, t. 1055; Horan. Prodr. Monogr. Scit. p. 17; Regel, Ind. Sem. Hort. Bot. Petrop. 1866, p. 86.

PANAMA, Veraguas (*Warscewicz*).

5. **Canna longifolia,** Bouché in Linnæa, xviii. p. 487; Horan. Prodr. Monogr. Scit. p. 15.

MEXICO.

6. **Canna lutea,** Rosc. in Bot. Reg. t. 773, et Scit. t. 18; Bot. Mag. t. 2085; Regel, Ind. Sem. Hort. Bot. Petrop. 1866, p. 87 (varietates 4).

Canna pallida, Rosc. Scit. t. 19, et *β. maculata,* t. 20.

Canna lagunensis, Lindl. Bot. Reg. t. 1311.

Canna aurantiaca, Rosc. Scit. t. 21.

MEXICO.

The distribution of this species is imperfectly known.

7. **Canna patens,** Ait. Hort. Kew. ed. 1, p. 1; Bot. Reg. t. 576; Rosc. Scit. t. 3; Regel, Ind. Sem. Hort. Bot. Petrop. 1866, p. 84.

Canna indica, Bot. Mag. t. 454, non Linn.

Canna xalapensis, Bouché in Linnæa, viii. p. 163.

SOUTH MEXICO, Jalapa (ex *Bouché*).

8. **Canna warscewiczii,** Dietr. in Otto & Dietr. Allg. Gart. Zeit. 1851, p. 289; Bot. Mag. t. 4854; Belg. Hort. ii. p. 277, cum ic. color.; Regel, Ind. Sem. Hort. Bot. Petrop. 1866, p. 87.

COSTA RICA (*Warscewicz*).

Tribe IV. MUSEÆ.

Museæ, Benth. et Hook. Gen. Plant. iii. pp. 639 et 655.

This tribe comprises four genera, of which *Strelitzia* is confined to South Africa; *Ravenala* is represented by one species in North-eastern South America, and by a second in Madagascar; and *Musa* is an Old-World genus, two or three species of which are commonly cultivated and more or less wild in all hot countries. *M. paradisiaca,* Linn., and *M. sapientum,* Linn., are both common in Tropical America.

8. HELICONIA.

Heliconia, Linn. Mant. n. 1297; Benth. et Hook. Gen. Plant. iii. p. 655.

An exclusively Tropical-American genus of about twenty-five species, one of which occurs here and there in the Old World, though perhaps nowhere as an indigenous plant.

1. **Heliconia bihai,** Linn. Mant. p. 211; Swartz, Obs. p. 96, t. 5; Horan. Prodr. Monogr. Scit. p. 39; Griseb. Fl. Brit. W. Ind. p. 600; Bot. Reg. t. 374.

Musa bihai, Linn. Sp. Pl. ed. 2, p. 1477.

South Mexico, Tuspango (*Bourgeau*, 2502).—Colombia to Peru and Guiana and the West Indies. Hb. Kew.

2. **Heliconia hirsuta,** Linn. fil. ex Griseb. Fl. Brit. W. Ind. p. 600.

Heliconia psittacorum, Seem. Bot. Voy. 'Herald,' p. 213, non Linn.

Panama, near the city of Panama (*Seemann*, 574).—Venezuela; Guiana; St. Vincent. Hb. Kew.

3. **Heliconia psittacorum,** Linn. f. Suppl. p. 158; Horan. Prodr. Monogr. Scit. p. 40; Griseb. Fl. Brit. W. Ind. p. 600; Bot. Mag. t. 502.

Nicaragua, Chontales (*Tate*, 419, 420).—Venezuela to Brazil and in the West Indies. Hb. Kew.

4. **Heliconia vaginalis,** Benth. Bot. Voy. 'Sulphur,' p. 171; Horan. Prodr. Monogr. Scit. p. 39.

Nicaragua, Chontales (*Seemann*, 170); Panama, Chagres (*Fendler*, 443).—Isle of Gorgona. Hb. Kew.

Order CXLII. BROMELIACEÆ.

Bromeliaceæ, Benth. et Hook. Gen. Plant. iii. p. 657.

This Order is restricted to America, and numbers about 350 described species, referred to twenty-seven genera.

1. BROMELIA.

Bromelia, Linn. Gen. Plant. n. 395, pro parte; Benth. et Hook. Gen. Plant. iii. p. 660.
Agallostachys, Beer, Bromel. p. 35.

Four or five species, inhabiting Tropical America.

1. **Bromelia pinguin,** Linn. Sp. Pl. p. 285; Rœm. et Schult. Syst. Veg. vii. 2, p. 1277; Redout. Lil. t. 396; Seem. Bot. Voy. 'Herald,' p. 216; Griseb. Fl. Brit. W. Ind. p. 591.

Agallostachys pinguin, Beer, Bromel. p. 36.

Panama, common in dry sunny localities (*Seemann*).—West Indies and Colombia to Guiana.

2. KARATAS.

Karatas, Adans. Fam. ii. p. 67; Benth. et Hook. Gen. Plant. iii. p. 660.
Nidularium, Lemaire, Jard. Fleur. iv. Misc. p. 60, t. 411.
Regelia, Lemaire, Ill. Hort. 1860, sub t. 245, non Schauer.

About ten species in Tropical America and the West Indies.

1. **Karatas plumieri,** E. Morr. Belg. Hort. 1872, p. 131.

Bromelia karatas, Linn. Sp. Pl. p. 285; Jacq. Hort. Vindob. tt. 31 et 32; Seem. Bot. Voy. 'Herald,' p. 216.

Nidularium karatas, Lemaire ex Griseb. Fl. Brit. W. Ind. p. 591.

Panama, in dark woods all over the isthmus (*Seemann*).—Cuba to Guiana.

3. ANANAS.

Ananas, Adans. Fam. ii. p. 67; Benth. et Hook. Gen. Plant. iii. p. 662.

Five or six species in Tropical America, or, if some of the distincter cultivated forms be regarded as species, as many as eight or ten.

1. **Ananas sativus,** Schultes in Rœm. et Schult. Syst. Veg. vii. 2, p. 1283.

Ananassa sativa, Lindl. Bot. Reg. sub t. 1068; DC. in Mém. Soc. Phys. et Hist. Nat. Genève, vii. p. 161, tt. 1 et 2; Seem. Bot. Voy. 'Herald,' p. 215; Griseb. Fl. Brit. W. Ind. p. 591; Desc. Fl. Antill. tt. 36 et 341.

Panama, apparently wild in various parts of the country, generally in dry localities on the outskirts of woods (*Seemann*).

This has been in general cultivation in the hotter parts of America for a very long period, and it is widely spread in a wild state; but it is impossible in all cases to decide whether it is indigenous or an escape from cultivation. It is also so thoroughly naturalized in some parts of the Old World as to have all the appearance of being indigenous.

4. ÆCHMEA.

Æchmea, Ruiz et Pav. Prodr. p. 47, t. 8; Syst. Veg. p. 83, et Fl. Peruv. et Chil. iii. p. 37, t. 264; Baker in Journ. Bot. 1879, p. 129.

A genus of about sixty species, ranging from Mexico and the West Indies to Paraguay and South Brazil.

1. **Æchmea dactylina,** Baker in Journ. Bot. 1879, p. 161.

Panama, Chagres (*Fendler*, 450). Hb. Kew.

2. **Æchmea laxiflora,** Benth. Bot. Voy. 'Sulphur,' p. 173; Baker in Journ. Bot. 1879, p. 167.

Hohenbergia laxiflora, Baker in Refug. Bot. sub t. 284.
Aloe americana arboribus innascens, Rel. Houst. ed. Banks, t. 16.
Bromelia bracteata, Schultes in Rœm. et Schult. Syst. Veg. vii. 2, p. 1280, pro parte.

South Mexico, Vera Cruz (*Houston*), Yucatan (*Schott*), Acapulco (*Sinclair*). Hb. Kew.

3. **Æchmea mariæ-reginæ,** Wendl. in Hamb. Gart. Zeit. xix. p. 32; Baker in Journ. Bot. 1879, p. 162; Bot. Mag. t. 6441.

Costa Rica, cultivated specimens only in Kew herbarium.

4. **Æchmea mexicana,** Baker in Journ. Bot. 1879, p. 165.

South Mexico, region of Orizaba (*Bourgeau*, 3106). Hb. Kew.

5. **Æchmea pubescens,** Baker in Journ. Bot. 1879, p. 135.

Nicaragua (*Tate*, 416); Panama, Chagres (*Fendler*, 449), without locality (*Seemann*). Hb. Kew.

6. **Æchmea schiedeana,** Schl. in Linnæa, xviii. p. 437; Baker in Journ. Bot. 1879, p. 168.

SOUTH Mexico, Hacienda de la Laguna (*Schiede*).

Baker suggests that this may be the same as *Æ. laxiflora*.

7. **Æchmea spectabilis,** Brongn. in Rev. Hort. 1875, p. 311; Baker in Journ. Bot. 1879, p. 165.

Pironneava spectabilis, K. Koch, ex E. Morr. Cat. 1873, p. 13.

GUATEMALA.

8. **Æchmea vriesioides,** Baker in Journ. Bot. 1879, p. 134.

NICARAGUA, Mosquito coast (*Capt. Miller*, 1774).—GUIANA.

5. BILLBERGIA.

Billbergia, Thunb. Dec. Pl. Bras. p. 30, ex Schultes; Benth. et Hook. Gen. Plant. iii. p. 664.

About twenty species in Tropical America, chiefly in Brazil.

1. **Billbergia pallidiflora,** Liebm. Ind. Sem. Hort. Hafn. 1854, p. 26.

NICARAGUA.

6. PITCAIRNIA.

Pitcairnia, Lhér. Sert. Angl. p. 7, t. 11; Benth. et Hook. Gen. Plant. iii. p. 665; Baker in Journ. Bot. 1881, p. 225.

About seventy species spread over Tropical America from Mexico and the West Indies to Peru, Bolivia, and South Brazil.

1. **Pitcairnia atrorubens,** Baker in Journ. Bot. 1881, p. 307.

Phlomostachys atrorubens, Beer, Bromel. p. 48.

Puya warscewiczii, Wendl. in Bot. Mag. t. 5225.

PANAMA, Volcan de Chiriqui (*Warscewicz*).

2. **Pitcairnia echinata,** Hook. Bot. Mag. t. 4709; Baker in Journ. Bot. 1881, p. 272; Lemaire, Jard. Fleur. t. 407; Fl. des Serres, t. 844.

MEXICO? COLOMBIA.

3. **Pitcairnia elata,** Liebm. Ind. Sem. Hort. Hafn. 1849, p. 14; Walp. Ann. vi. p. 91.

MEXICO.

Baker (Journ. Bot. 1881, p. 270) states that the description of this plant agrees, as far as it goes, with *P. albiflos*, a Brazilian species.

4. **Pitcairnia ferruginea,** Ruiz et Pav. Fl. Peruv. et Chil. iii. p. 36; Baker in Journ. Bot. 1881, p. 304.

Pitcairnia asterotricha, Poepp. et Endl. Nov. Gen. t. 158.

Puya grandiflora, Hook. Bot. Mag. t. 5234.

South Mexico, Real del Monte (ex *Hooker*).—Peru. Hb. Kew.

Baker states that the Mexican locality given in the 'Botanical Magazine' is doubtless a mistake.

5. **Pitcairnia fulgens,** A. Dietr. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 137.

Guatemala (*Linden*).

6. **Pitcairnia gireoudiana,** A. Dietr. in Otto & Dietr. Allg. Gart. Zeit. xxi. p. 105.

Guatemala.

7. **Pitcairnia heterophylla,** Beer, Bromel. p. 68; Baker in Journ. Bot. 1881, p. 228.

Pitcairnia morrenii, Lemaire, Jard. Fleur. t. 291.
Pitcairnia cernua, Kunth et Bouché, Ind. Sem. Hort. Berol. 1848, p. 12.
Pitcairnia exscapa, Liebm. Ind. Sem. Hort. Hafn. 1848, p. 12; Bot. Mag. t. 4591.
Puya heterophylla, Lindl. Bot. Reg. 1840, t. 71.
Puya longifolia, Morren in Ann. Gand, ii. p. 483, t. 101; Lindl. & Paxt. Fl. Gard. iii. t. 86.

South Mexico, region of Orizaba (*Bourgeau*, 2524; *Müller*); Guatemala, Alotenango (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 307, 414, 415), Realejo (*Sinclair*); Panama, near David, Veraguas (*Seemann*, 1564).—Venezuela; Colombia. Hb. Kew.

8. **Pitcairnia imbricata,** Baker in Journ. Bot. 1881, p. 307.

Neumannia imbricata, Brongn. in Ann. Sc. Nat. série 2, xv. p. 362.
Phlomostachys imbricata, Beer, Bromel. p. 47.

South Mexico, without locality (*Andrieux*), valley of Cordova (*Bourgeau*, 1778). Hb. Kew.

9. **Pitcairnia jacksoni,** Hook. Bot. Mag. t. 4540; Baker in Journ. Bot. 1881, p. 267.

Lamproconus jacksoni, Lemaire, Jard. Fleur. t. 127, icon Bot. Mag. mutuata.

Guatemala (*Jackson* cult.).

10. **Pitcairnia karwinskiana,** Schultes in Rœm. et Schult. Syst. Veg. vii. 2, p. 1239; Baker in Journ. Bot. 1881, p. 268.

Pitcairnia ringens, Klotzsch in Link, Klotzsch & Otto Ic. Pl. Rar. Hort. Berol. p. 63, t. 25; Regel, Gartenflora, t. 53.
Pitcairnia splendens, Warsc. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 176.

South Mexico, Orizaba (*Botteri*, 911), without locality (*Karwinski*). Hb. Kew.

11. **Pitcairnia montalbensis,** A. Dietr. in Otto & Dietr. Allg. Gart. Zeit. xix. p. 138.

Mexico (*Linden*).

12. **Pitcairnia moritziana,** K. Koch et Bouché, Ind. Sem. Hort. Berol. 1856, App. p. 4; Baker in Journ. Bot. 1881, p. 231.

Guatemala (*Veitch* cult.).

13. **Pitcairnia ochroleuca,** Baker in Journ. Bot. 1881, p. 306. (Tab. LXXXV.)

Neumannia ochroleuca, K. Koch et Bouché, Ind. Sem. Hort. Berol. 1856, App. p. 2.

GUATEMALA, Barranca Honda, Volcan de Fuego 3800 feet (*Salvin*). Hb. Kew.

EXPLANATION OF TAB. LXXXV.

A reduced figure of an entire plant of *Pitcairnia ochroleuca,* with leaf and inflorescence, natural size.
Fig. 1, a flower; 2, a segment of the perianth and stamen; 3, a pistil: enlarged.

14. **Pitcairnia odorata,** Regel, Gartenfl. iv. p. 46, t. 114; Walp. Ann. vi. p. 90.

Tillandsia schuchii, Beer et Fenzl in Otto & Dietr. Allg. Gart. Zeit. xiv. p. 265.

Cochliopetalum odoratum, Beer, Bromel. p. 69.

MEXICO.

15. **Pitcairnia petiolata,** Baker in Journ. Bot. 1881, p. 307.

Neumannia petiolata, K. Koch et Bouché, Ind. Sem. Hort. Berol. 1856, App. p. 2.

GUATEMALA (*Warscewicz*).

16. **Pitcairnia punicea,** Lindl. ex K. Koch in Ind. Sem. Hort. Berol. 1857, App. p. 8; Walp. Ann. vi. p. 90; Baker in Journ. Bot. 1881, p. 304.

SOUTH MEXICO, Teapa, Tabasco (*Linden*, 1159). Hb. Kew.

17. **Pitcairnia tabulæformis,** Linden, Cat. 1862, p. 5; Morr. in Belg. Hort. 1862, p. 257, cum icone; Lemaire, Ill. Hort. t. 344; Baker in Journ. Bot. 1881, p. 228.

SOUTH MEXICO, Chiapas (*Ghiesbreght*).

18. **Pitcairnia vallisoletana,** Llav. et Lex. Nov. Veg. Descr. i. p. 19; Journ. Bot. 1881, p. 303.

SOUTH MEXICO, mountains of Valladolid (*La Llave*).

19. **Pitcairnia zeifolia,** K. Koch, Monogr. p. 4; Baker in Journ. Bot. 1881, p. 305; Bot. Mag. t. 6535.

GUATEMALA (*Warscewicz*).—VENEZUELA.

7. HECHTIA.

Hechtia, Klotzsch in Otto & Dietr. Allg. Gart. Zeit. 1835, p. 401; Zucc. in Abhandl. Akad. Wiss. Münch. iii. p. 239, t. 6; Benth. et Hook. Gen. Plant. iii. p. 667.

This genus is not known to extend beyond Mexico.

1. **Hechtia argentea,** Baker in Bot. Mag. sub t. 6554, nomen tantum.

MEXICO.

Mr. Baker has furnished us with the following descriptive notes taken from living plants:—

"Habit of *H. ghiesbreghtii*; leaves up to 100, in a dense rosette, all except the innermost horizontally spreading in the lower part and then sharply recurved, rigid in

texture, the largest 1½ to 2 feet long by ¾ inch broad, clothed on both sides with a dense coat of a persistent tomentum, beneath which the surface is green, fine ribs visible on both sides through the tomentum; pungent, spreading, uncinate, horny marginal spines ½ to ¾ inch apart and 3 to 4 lines long; inflorescence a lax spike with small white flowers in globose clusters.

"Very near *H. ghiesbreghtii*, but that has leaves green above, growing bright purple in the upper part."

2. **Hechtia cordylinoides,** Baker in Bot. Mag. t. 6554.

MEXICO. Cultivated specimens only in Kew herbarium.

3. **Hechtia ghiesbreghtii,** Lemaire, Ill. Hort. x. t. 378; Bot. Mag. t. 5842.

MEXICO.

Bentham & Hooker (Gen. Plant. *l. c.*) suggest that this is the same as *H. glomerata.*

4. **Hechtia glomerata,** Zucc. in Abhandl. Akad. Wiss. Münch. iii. p. 240, t. 6.

Dasylirion pitcairniæfolium, Zucc. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 258.

MEXICO (*Karwinski*).

5. **Hechtia schottii,** Baker, n. sp.

"Leaf thick, rigid, lanceolate, 18 inches long by ¾ to ⅞ broad at base exclusive of prickles, tapering to a long point; face naked; back white striped; prickles brown, horny, distant, large, curved upwards, ⅛ to ¼ inch long, apex pungent. Inflorescence a lax panicle with ascending branches and a floccose rhachis; branches spicate, close at top, lax downwards; bracts deltoid, cuspidate, lowest ⅛ to ¼ inch long. Sepals oblong, half as long as capsule; petals not seen. Capsule ⅓ inch long, valves septicidal and split down the back."—*Baker MSS.*

SOUTH MEXICO, Cerro de Maxeana, Yucatan (*Schott*, 645). Hb. Brit. Mus.

This differs from *H. argentea* and *H. ghiesbreghtii* in its densely spicate inflorescence.

6. **Hechtia stenopetala,** Klotzsch in Otto & Dietr. Allg. Gart. Zeit. 1835, p. 402.

SOUTH MEXICO, Cuesta Grande de Chiconquiaco (*Schiede & Deppe*).

8. CARAGUATA.

Caraguata, Lindl. Bot. Reg. sub t. 1068; Benth. et Hook. Gen. Plant. iii. p. 668.

Five species are recorded from the West Indies, Central America, and Colombia.

1. **Caraguata zahnii,** Hook. f. Bot. Mag. t. 6059; Belg. Hort. 1873, p. 342, tt. 19 et 20.

PANAMA, Volcan de Chiriqui (*Zahn*).

9. TILLANDSIA.

Tillandsia, Linn. Gen. Plant. n. 396; Benth. et Hook. Gen. Plant. iii. p. 669.
Pityrophyllum, Beer, Bromel. p. 79.
Anoplophyllum, Beer, l. c. p. 39.
Vriesia, Lindl. Bot. Reg. 1843, t. 10.
Platystachya, K. Koch ex Beer, Bromel. p. 80.
Allardtia, Dietr. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 241.

Of this genus upwards of a hundred species are enumerated, covering the whole range of the Order, from Virginia in the north to Chili and Buenos Ayres. Among the Mexican and Central-American specimens at Kew are several very distinct, apparently undescribed species; but in most instances the materials are insufficient for complete descriptions, so we have thought it better to be content with indicating their affinities, especially as many of the described species are imperfectly known.

1. **Tillandsia aloides,** Ch. et Schl. in Linnæa, vi. p. 55.
South Mexico, near Jalapa (*Schiede & Deppe*).
This is most likely a species of *Catopsis*.

2. **Tillandsia apicroides,** Ch. et Schl. in Linnæa, vi. p. 55.
South Mexico, Jalapa (*Schiede & Deppe*).
If a specimen in Kew herbarium has been correctly identified with this species, it is the same as *Catopsis parviflora*; but the specimen does not agree very well with the description.

3. **Tillandsia brachycaulos,** Schl. in Linnæa, xviii. p. 422; E. Morr. Belg. Hort. 1878, p. 185, t. 11.
Mexico (*Leibold; Karwinski*).

4. **Tillandsia bulbosa,** Hook. Exot. Fl. t. 173; Griseb. Fl. Brit. W. Ind. p. 596; Bot. Mag. t. 4288 (var. *picta*).
Platystachys bulbosa, Beer, Bromel. p. 83.
Guatemala (*Skinner*); Panama (*S. Hayes*).—Jamaica to Trinidad, Guiana, and Brazil.

5. **Tillandsia cærulea,** H. B. K. Nov. Gen. et Sp. i. p. 291; Rœm. et Schult. Syst. Veg. vii. 2, p. 1209.
South Mexico, on the banks of Macara and near Sochipala and Sopilote (*Humboldt & Bonpland*).

6. **Tillandsia cæspitosa,** Ch. et Schl. in Linnæa, vi. p. 54, non Leconte.
Vriesia incurvata, Gaud. Voy. 'Bonite,' t. 68, teste Baker.
Tillandsia multicaulis, Steud. Nomencl.
South Mexico, region of Orizaba (*Bourgeau*, 2960), without locality (*Hahn*). Hb. Kew.

7. **Tillandsia canescens,** Swartz, Prodr. p. 57, et Fl. Ind. Occ. i. p. 595; Rœm. et Schult. Syst. Veg. vii. 2, p. 1216; Griseb. Fl. Brit. W. Ind. p. 595.

South Mexico, valley of Cordova (*Bourgeau*, 2103).—Jamaica. Hb. Kew.

8. **Tillandsia complanata,** Morr. Belg. Hort. 1872, p. 300, t. 23, vix Benth. teste Baker.

Platystachys complanata, Morr. l. c.
Vriesia xyphostachys, Hook. Bot. Mag. t. 5287.

South Mexico, near Cordova (*Omer de Malzine*).

9. **Tillandsia cyanea,** E. Morr. Belg. Hort. 1879, p. 297.

Platystachys cyanea, K. Koch, Ind. Sem. Hort. Berol. 1856; Walp. Ann. vi. p. 68.
Allardtia cyanea, Dietr. in Otto & Dietr. Allg. Gart. Zeit. 1852, p. 242.

Guatemala (*Warscewicz*).

10. **Tillandsia ehrenbergiana,** Hemsley.

Platystachys ehrenbergiana, K. Koch in Ind. Sem. Hort. Berol. Append. iv. p. 5.

Mexico (*Ehrenberg*).—St. Thomas.

11. **Tillandsia fasciculata,** Swartz, Prodr. p. 56, et Fl. Ind. Occ. i. p. 586; Rœm. et Schult. Syst. Veg. vii. 2, p. 1211; Griseb. Fl. Brit. W. Ind. p. 595.

South Mexico, Chila, Puebla (*Andrieux*, 59).—West Indies. Hb. Kew.

The Mexican specimen agrees exactly with one collected by Guilding in St. Vincent, and referred by Grisebach to this species.

12. **Tillandsia fasciculata,** Swartz, var. Griseb. Cat. Pl. Cub. p. 253.

South Mexico, valley of Cordova (*Bourgeau*, 1768).—Cuba. Hb. Kew.

Probably specifically different from *T. fasciculata.* Bourgeau's Mexican specimens do not seem to differ from Wright's Cuban n. 680.

13. **Tillandsia filifolia,** Ch. et Schl. in Linnæa, vi. p. 53.

Tillandsia staticeflora, E. Morr. Belg. Hort. 1871, p. 117, t. 12.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), region of Orizaba (*Bourgeau*, 1202; *Botteri*, 1052), Tenampa, Vera Cruz (*Linden*, 3), valley of Cordova (*Bourgeau*, 2102), Yucatan and Tabasco (*Johnson*, 128). Hb. Kew.

14. **Tillandsia flexuosa,** Swartz, Prodr. p. 57, et Fl. Ind. Occ. i. p. 590; Rœm. et Schult. Syst. Veg. vii. 2, p. 1213; Griseb. Fl. Brit. W. Ind. p. 596; Bot. Reg. t. 749 (var. *pallida*).

Tillandsia tenuifolia, Jacq. Sel. Stirp. Am. p. 92, t. 63, non Linn.
Tillandsia aloifolia, Hook. Exot. Fl. t. 205.

Honduras (*Gabb*); Panama (*S. Hayes*, 174).—Colombia to Guiana and throughout the West Indies. Hb. Kew.

15. **Tillandsia foliosa,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 9).

South Mexico, Jalapa at 4000 feet (*Galeotti*, 4909).

16. **Tillandsia foliosa,** Griseb. Fl. Brit. W. Ind. p. 597, non Mart. et Gal. teste Baker in hb. Kew.

South Mexico, near Toluca (*Andrieux*, 60), near Guadalupe (*Bourgeau*, 893, 1294). —Guiana; St. Vincent. Hb. Kew.

17. **Tillandsia gladioliflora,** Wendl. in Hamb. Gart. Zeit. xix. p. 31; Wiener Ill. Gart. Zeit. 1880, p. 97, t. 1 (var. *purpurascens*).

Costa Rica (*Wendland*).

18. **Tillandsia grandis,** Schl. in Linnæa, xviii. p. 424.

South Mexico, Hacienda de la Laguna (*Schiede*).

19. **Tillandsia karswinskiana,** Schultes in Rœm. et Schult. Syst. Veg. vii. 2, p. 1209; Baker in Gard. Chron. n. s. x. p. 460.

Mexico (*Karwinski*).

20. **Tillandsia kunthiana,** Gaud. Voy. 'Bonite,' t. 53.

Platystachys kunthiana, Beer, Bromel. p. 90.

South Mexico, valley of Cordova (*Bourgeau*, 1777, 1908). Hb. Kew.

21. **Tillandsia leiboldiana,** Schl. in Linnæa, xviii. p. 414.

South Mexico, Barrancas (*Leibold*), Hacienda de la Laguna (*Schiede*).

22. **Tillandsia limbata,** Schl. in Linnæa, xviii. p. 419.

South Mexico, Hacienda de la Laguna (*Schiede*).

23. **Tillandsia malzinei,** Baker in Kew Gard. Rep. 1878, p. 59; Bot. Mag. t. 6495.

Vriesia malzinei, E. Morr. Belg. Hort. 1874, p. 313, t. 14.

South Mexico, near Cordova (*Malzine*).

24. **Tillandsia paniculata,** Ch. et Schl. in Linnæa, vi. p. 54, et xviii. p. 424.

Tillandsia deppeana, Steud. Nomencl.

South Mexico, Jalapa (*Schiede & Deppe*).

25. **Tillandsia polystachya,** Linn. Sp. Pl. ed. 2, p. 410; Schultes in Rœm. et Schult. Syst. Veg. vii. 2, p. 1216.

South Mexico, Yucatan and Tabasco (*Johnson*, 83; *Schott*).—West Indies. Hb. Kew.

26. **Tillandsia quadrangularis,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 9).

South Mexico, Chinantla and Rincon, Oaxaca 2500 to 4500 feet (*Galeotti*, 4917), valley of Cordova (*Bourgeau*, 1773), Jalapa (*Coulter*, 1577). Hb. Kew.

27. **Tillandsia recurvata,** Linn. Sp. Pl. ed. 2, p. 410; Griseb. Fl. Brit. W. Ind.

p. 598; Baker in Journ. Bot. 1878, p. 239; Ruiz et Pav. Fl. Peruv. et Chil. iii. p. 42, t. 271.

Tillandsia uniflora, H. B. K. Nov. Gen. et Sp. i. p. 290.
Diaphoranthema recurvata et *D. uniflora,* Beer, Bromel. p. 156.

Florida; Texas.—Mexico, Vera Cruz to Orizaba (*Müller*, 1756), Xochialco (*Hahn*), valley of Mexico (*Bourgeau*, 96).—West Indies and southward to Chili and Buenos Ayres. Hb. Kew.

28. **Tillandsia recurvifolia,** Hook. Bot. Mag. t. 5246.

Panama (*Christie*).

29. **Tillandsia (Vriesia) ringens,** Griseb. Cat. Pl. Cub. p. 255.

Panama, Chagres (*Fendler*, 448).—Cuba. Hb. Kew.

30. **Tillandsia streptophylla,** Scheidw. in Hortic. Belge, iii. p. 252, cum ic. xylogr.; Belg. Hort. 1878, p. 296, tt. 18 et 19.

Tillandsia circinnata, Schl. in Linnæa, xviii. p. 430.

South Mexico (*Malzine*), Hacienda de la Laguna (*Leibold*), valley of Cordova (*Bourgeau*), without locality (*Hahn*). Hb. Kew.

31. **Tillandsia setacea,** Swartz, Fl. Ind. Occ. i. p. 593; Griseb. Fl. Brit. W. Ind. p. 595; Refug. Bot. iv. t. 288 (nec Hook. Bot. Mag. t. 3275).

Tillandsia tenuifolia, Linn. ex parte.
Tillandsia pulchella, Hook. Exot. Fl. ii. t. 154 (*T. pulchra* in textu).

South Mexico, Jalisco (*Beechey*), Jalapa (*Coulter*, 1577), valley of Cordova (*Bourgeau*, 1773); Guatemala, Mazatenango (*Bernoulli*, 1193).—Southward to Chili and Uruguay, and in the West Indies. Hb. Kew.

32. **Tillandsia tortilis,** Klotzsch ex Beer, Bromel. p. 266.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 872); South Mexico, Tacubaya (*Bourgeau*, 97). Hb. Kew.

This name, applied to a very distinct species, seems to have reached Kew from the Paris herbarium; it is also included in Beer's enumeration; but we have not found any publication of it with a description.

33. **Tillandsia tricolor,** Ch. et Schl. in Linnæa, vi. p. 54; E. Morr. Belg. Hort. 1879, p. 162, tt. 10 et 11.

South Mexico, Jalapa (*Schiede & Deppe*), region of Orizaba (*Bourgeau*, 2961, 3075). Hb. Kew.

There is little doubt that Bourgeau's specimens belong to the species figured by Morren; but it is not so certain that they are identical with Chamisso and Schlechtendal's plant.

34. **Tillandsia usneoides,** Linn. Sp. Pl. ed. 2, p. 411; Griseb. Fl. Brit. W. Ind. p. 598; Belg. Hort. 1877, p. 313, t. 17; Bot. Mag. t. 6309.

Virginia to Florida.—Mexico, valley of Mexico (*Bourgeau*, 95), Real del Monte to Zacatecas (*Coulter*, 1578), Puebla (*Andrieux*, 56), and various other collectors without special localities.—Southward to Chili and Uruguay, and throughout the West Indies. Hb. Kew.

35. **Tillandsia variabilis,** Schl. in Linnæa, xviii. p. 418.

Tillandsia azurea, Presl? Ch. et Schl. in Linnæa, vi. p. 418.

South Mexico, Papantla (*Schiede & Deppe*).

36. **Tillandsia variegata,** Schl. in Linnæa, xviii. p. 429.

South Mexico, Jalapa (*Schiede*).

37. **Tillandsia vestita,** Ch. et Schl. in Linnæa, vi. p. 52, nec Benth. Pl. Hartw. p. 25.

Tillandsia flavescens, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 8).

South Mexico, Jalapa (*Galeotti*, 4912), Orizaba (*Bilimek*, 425; *Müller*, 1239), Chiquihite, valley of Mexico (*Bourgeau*, 2179), Yucatan and Tabasco (*Johnson*, 84). Hb. Kew.

38. **Tillandsia vestita,** Benth. Pl. Hartw. p. 25, nec Ch. et Schl.

South Mexico, Bolaños (*Hartweg*), Guadalupe (*Bourgeau*, 894), Jalapa (*Coulter*, 1579). Hb. Kew.

39. **Tillandsia viminalis,** Hemsl.

Vriesia viminalis, E. Morr. Belg. Hort. 1878, p. 257, tt. 14 et 15.

Costa Rica, Volcan de Irazu (*Wendland*).

40. **Tillandsia virginalis,** E. Morr. Belg. Hort. 1880, p. 238.

Tillandsia heterophylla, E. Morr. Belg. Hort. 1873, p. 138.

South Mexico, near Cordova (*Malzine*).

41. **Tillandsia (§ Conostachys),** sp.

South Mexico, region of Orizaba (*Bourgeau*, 2389). Hb. Kew.

42. **Tillandsia (§ Vriesia),** sp. (aff. *T. cæspitosæ*).

South Mexico, valley of Cordova (*Bourgeau*, 2274). Hb. Kew.

43. **Tillandsia (§ Vriesia),** sp.

Nicaragua, Chontales (*Tate*, 243). Hb. Kew.

There are two distinct miniature species under this number.

44. **Tillandsia (§ Vriesia),** sp. (aff. *T. platynemæ*, Griseb.).

South Mexico, region of Orizaba (*Bourgeau*, 3055), without locality (*Hahn*). Hb. Kew.

45. **Tillandsia (§ Vriesia),** sp.

Guatemala, Barranca Honda at 3800 feet (*Salvin*, 6). Hb. Kew.

46. **Tillandsia (§ Platystachys),** sp.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 873). Hb. Kew.

47. **Tillandsia,** sp. (aff. *T. foliosæ*, Griseb.).

South Mexico, valley of Cordova (*Bourgeau*, 1906), without locality (*Hahn*); Nicaragua, Chontales (*Tate*, 336). Hb. Kew.

48. **Tillandsia (§ Platystachys),** sp. (aff. *T. polystachyæ*).

South Mexico, region of Orizaba (*Bourgeau*, 3076). Hb. Kew.

49. **Tillandsia (§ Platystachys),** sp. (aff. *T. polystachyæ*).

South Mexico, valley of Cordova (*Bourgeau*, 1908). Hb. Kew.

50. **Tillandsia,** sp.

South Mexico, Puebla (*Andrieux*, 57). Hb. Kew.

51. **Tillandsia,** sp. (aff. *T. vestitæ*, Benth. non Ch. et Schl.).

South Mexico, Chalco (*Andrieux*, 58). Hb. Kew.

10. CATOPSIS.

Catopsis, Griseb. in Nachr. Gesellsch. Wiss. Gœtt. 1842, pp. 10 et 21; Benth. et Hook. Gen. Plant. iii. p. 670.
Pogospermum, Brongn. in Ann. Sc. Nat. série 5, i. p. 327.
Tussacia, Klotzsch, ex Beer Bromel. p. 69, non aliorum.

About eight species in Mexico, Central America, and the West Indies.

The names of the Mexican species are so involved that we can only say that there are three or four Mexican species, two of them corresponding probably to the *Tillandsia apicroides* and *T. aloides*, Ch. et Schl. There are specimens in Kew herbarium collected in the valley of Cordova, Mexico (*Bourgeau*, 1770), named by Professor Morren himself, we believe, *Tussacia aloides*, E. Morr. (*Tillansdia aloides*, Ch. et Schl.). Another plant (Mexico, *Hahn*), referable to *Catopsis*, is named *Tillandsia vitellina* Otto (Link, Kl. et Otto, Ic. Pl. Rar. Hort. Berol. p. 101, t. 40). A third species (Mexico, *Hahn*) is very distinct, and probably undescribed.

Order CXLIII. HÆMODORACEÆ.

Hæmodoraceæ, Benth. et Hook. Gen. Plant. iii. p. 671.

Twenty-six genera, comprising about 120 species, are referred to this Order. They inhabit Australia, chiefly the south-west, South Africa, North and South America, and Central and Eastern Asia. Several genera, besides the one below, are sparsely represented in the countries bordering on Mexico and Panama, and may yet be found within our limits. *Lachnanthes tinctoria*, Ell., inhabits the Eastern States, from New Jersey to Florida, and reappears in Cuba.

1. XIPHIDIUM.

Xiphidium, Aubl. Pl. Guian. i. p. 33, t. 11; Benth. et Hook. Gen. Plant. iii. p. 675.

One or two species, widely dispersed in Tropical America.

1. **Xiphidium floribundum,** Swartz, Prodr. p. 17, et Fl. Ind. Occ. i. p. 80, t. 2; Griseb. Fl. Brit. W. Ind. p. 589; Bot. Mag. t. 5055. ✓

Xiphidium albidum, Lam. Ill. i. p. 131.
Xiphidium album, Willd. Sp. Pl. i. p. 248.
Xiphidium cæruleum, Aubl. Pl. Guian. i. p. 33, t. 11.
Xiphidium giganteum, Lindl. Bot. Reg. xxxii. sub tab. 66, et xxxiii. sub tab. 1.

South Mexico, Mecapulco, Vera Cruz (*Liebmann*); Nicaragua, Chontales (*Seemann,* 185; *Tate,* 258, 455); Panama, Paraiso station (*S. Hayes,* 252).—Colombia to Guiana and Brazil, and in the West Indies. Hb. Kew.

Order CXLIV. IRIDEÆ.

Irideæ, Benth. et Hook. Gen. Plant. iii. p. 681.

An Order of fifty-seven genera, and upwards of 700 species, very widely spread in temperate and tropical regions, most numerous in the countries bordering the Mediterranean and in South Africa; not uncommon in America; several in Australia, and a few in Asia.

1. IRIS.

Iris, Linn. Gen. Plant. n. 59; Benth. et Hook. Gen. Plant. iii. p. 686.

This genus numbers nearly 100 described species, generally diffused in the temperate regions of the northern hemisphere.

1. **Iris missouriensis,** Nutt. in Journ. Acad. Sc. Philad. vii. pt. 1, p. 58; S. Wats. in Proc. Am. Acad. xvii. p. 160.

Missouri.—North Mexico, Lerios, east of Saltillo at 10,000 feet (*Palmer,* 1302). Hb. Kew.

2. MARICA.

Marica, Ker in Bot. Mag. t. 654, non ejusd. ibid. t. 655, non Schreb.; Benth. et Hook. Gen. Plant. iii. p. 689.

Nine species are known, one of them inhabiting Western Tropical Africa and the rest Tropical America.

1. **Marica acorifolia,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2).

Moræa acorifolia, H. B. K.? ex Mart. et Gal.

South Mexico, gneissic rocks, Penoles, Misteca Alta, Oaxaca 7000 to 7500 feet (*Galeotti,* 5368).

2. **Marica variegata,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2).
South Mexico, Mirador at 3000 feet (*Galeotti*, 5370).

3. **Marica,** sp.
Cypella gracilis, Klatt in Linnæa, xxxi. p. 541 ?
South Mexico, Mirador (*Liebmann*). Hb. Kew.
This is not the *Marica gracilis*, Herb. (Bot. Mag. t. 3713), a Brazilian plant, though it bears Klatt's name; by whom given does not appear.

3. TRIMEZIA.

Trimezia, Salisb. in Trans. Hort. Soc. Lond. i. p. 308 (nomen tantum); Herb. in Bot. Reg. 1844, Misc. p. 88; Benth. et Hook. Gen. Plant. iii. p. 690.

Besides the following, there are five species reported from Brazil.

1. **Trimezia lurida,** Salisb. in Trans. Hort. Soc. Lond. i. p. 308.
Trimezia meridensis, Herb. in Bot. Reg. 1844, Misc. p. 88.
Iris martinicensis, Jacq. Enum. Pl. Carib. et Am. p. 12, et Sel. Stirp. Am. p. 7, t. 7; Linn. Sp. Pl. ed. 2, p. 58; Bot. Mag. t. 416; Descour. Fl. Antill. t. 252.
Cipura martinicensis, H. B. K. Nov. Gen. et Sp. i. p. 320; Refug. Bot. 310; Griseb. Fl. Brit. W. Ind. p. 589.
Marica martinicensis, Ker in König & Sims, Ann. Bot. i. p. 245.
Vieusseuxia martinicensis, DC. in Ann. Mus. Par. ii. p. 138.
Lansbergia caracasana, De Vriese, Ind. Sem. Hort. Lugd. Bat. 1846, p. 2; Klatt in Mart. Fl. Bras. iii. t. 57. fig. 2.
Xanthocromyon herberti, Karst. in Bot. Zeit. 1847, p. 694.
Ramaclea funebris, Morr. Belg. Hort. iii. p. 3, t. 1.
Lansbergia martinicensis, Baker in Journ. Linn. Soc. Lond. xvi. p. 127.
South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 651).—Nearly all over Tropical America and the West Indies.

4. TIGRIDIA.

Tigridia, Juss. Gen. Plant. p. 57; Baker in Journ. Linn. Soc. Lond. xvi. p. 135; Benth. et Hook. Gen. Plant. iii. p. 690.

About half-a-dozen species, inhabiting Mexico, Central America, Peru, and Chili.

1. **Tigridia atrata,** Baker in Journ. Linn. Soc. Lond. xvi. p. 136.
Beatonia atrata, Herb. in Bot. Reg. 1843, Misc. p. 72.
South Mexico, Real del Monte (*J. Rule*).

2. **Tigridia curvata,** Baker in Journ. Linn. Soc. Lond. xvi. p. 136.
Beatonia curvata, Herb. in Bot. Reg. 1843, Misc. p. 74.
South Mexico, Comalapan, near Real del Monte ? (*Hartweg*).

3. **Tigridia pavonia,** Ker (Gawler) in König & Sims's Ann. Bot. i. p. 246; Red. Lil. t. 6; Lodd. Bot. Cab. t. 1424; Baker in Journ. Linn. Soc. Lond. xvi. p. 136.

Ferraria pavonia, Linn. f. Suppl. p. 407 ; Andr. Bot. Rep. t. 178.
Ferraria tigridia, Bot. Mag. t. 532.
Tigridia grandiflora, Salisb. in Trans. Hort. Soc. Lond. i. p. 309.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 524), San Felipe, near Oaxaca (*Andrieux*, 81), Pedregal (*Bourgeau*, 658); GUATEMALA (*Bernoulli*, 322). Hb. Kew.

Var. **conchiflora**, Baker in Journ. Linn. Soc. Lond. xvi. p. 136 ; Sweet, Brit. Fl. Gard. t. 128 ; Paxt. Mag. Bot. xiv. p. 53, cum ic. color. ; Fl. des Serres, tt. 908–910 ; Ann. Gand, 1847, t. 145.
Tigridia oxypetala, Morison, Fl. Conspic. t. 20.

SOUTH MEXICO (*Bullock*).

4. **Tigridia vanhouttei**, Roezl in Fl. des Serres, t. 2174 ; S. Wats. in Proc. Am. Acad. xviii. p. 160.

SOUTH MEXICO, Islapalapa (*Roezl*), Guanajuato (*Dugès*). Hb. Kew.

5. **Tigridia violacea**, Schiede ex Schl. in Otto & Dietr. Allg. Gart. Zeit. 1838, p. 233 ; Link, Kl. et Otto, Ic. Pl. Rar. Hort. Berol. p. 50, t. 20.
Beatonia purpurea, Herb. in Bot. Mag. sub t. 3779.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 819), Yucatan (*Linden*, 227). Hb. Kew.

5. RIGIDELLA.

Rigidella, Lindl. Bot. Reg. 1840, t. 16, et Misc. p. 35 ; Benth. et Hook. Gen. Plant. iii. p. 691.

This genus is restricted to Mexico and Central America.

1. **Rigidella flammea**, Lindl. Bot. Reg. 1840, t. 16 ; Paxt. Mag. Bot. vii. p. 247, cum icone.

SOUTH MEXICO, Cumbre de Istipec (*Liebmann*), Zimapan (*Coulter*, 1538), valley of Mexico (*Bourgeau*, 740), San Felipe (*Andrieux*, 78), near Orizaba (*Bourgeau*, 2852), Chiapas (*Ghiesbreght*, 825). Hb. Kew.

2. **Rigidella immaculata**, Herb. in Bot. Reg. 1841, t. 68 ; Fl. des Serres, tt. 502 et 2215.

GUATEMALA (*Hartweg*).

3. **Rigidella orthantha**, Lemaire in Fl. des Serres, 1845, p. 107, t. 45 ; Paxt. Mag. xiv. p. 121, cum ic. color.

MEXICO (*Ghiesbreght*).

It is very likely that some of the specimens in Kew herbarium, referred to the first species of this genus, belong to the second or third ; thus Ghiesbreght's number 825 from Chiapas is, perhaps, *R. orthantha*.

6. CIPURA.

Cipura, Aubl. Pl. Guian. i. p. 38, t. 13; Benth. et Hook. Gen. Plant. iii. p. 694.

About four species, inhabiting Mexico, the West Indies, and South America.

1. **Cipura paludosa,** Aubl. Pl. Guian. i. p. 38, t. 13; Klatt in Mart. Fl. Bras. iii. t. 64; Griseb. Fl. Brit. W. Ind. p. 589.

Marica paludosa, Willd. Sp. Pl. i. p. 246; Bot. Mag. t. 646.
Cipura humilis et *C. graminea,* H. B. K. Nov. Gen. et Sp. i. p. 320.

South Mexico, Cordillera of Vera Cruz at 3000 feet (*Galeotti,* 5372).—Venezuela; Guiana; Brazil; Trinidad. Hb. Kew.

7. SPHENOSTIGMA.

Sphenostigma, Baker in Journ. Linn. Soc. Lond. xvi. p. 124; Benth. et Hook. Gen. Plant. iii. p. 694.

A Tropical-American genus of about half-a-dozen species.

1. **Sphenostigma longispatha,** Benth. et Hook. Gen. Plant. iii. p. 695.

Cardiostigma longispatha, Baker in Journ. Linn. Soc. Lond. xvi. p. 102.
Gelasine longispatha, Herb. in Benth. Pl. Hartw. p. 53.
Calydorea longispatha, Baker in Trimen's Journ. Bot. 1876, p. 188.
Botherbe longispatha, Klatt in Linnæa, xxxi. p. 564.

South Mexico, Anganguio (*Hartweg,* 403). Hb. Kew.

[*Eleutherine plicata*, Herb., a member of this Order, widely dispersed in the West Indies and South America, may be expected to occur within our limits.]

[*Calydorea,* as limited by Bentham and Hooker (Gen. Plant. iii. p. 695), is by mistake recorded by them as being represented in Mexico.]

8. NEMASTYLIS.

Nemastylis, Nutt. in Trans. Am. Phil. Soc. v. p. 157; Benth. et Hook. Gen. Plant. iii. p. 696.

Of this genus six species have been described; they are scattered from Carolina to Bolivia and Brazil.

1. **Nemastylis multiflora,** Benth. et Hook. ex S. Wats. in Proc. Am. Acad. xviii. p. 160.

Chlamydostylus multiflorus, Baker in Trimen's Journ. Bot. 1876, p. 186, et Journ. Linn. Soc. Lond. xvi. p. 107.
Moræa foliosa, H. B. K. Nov. Gen. et Sp. i. p. 322?

North Mexico, Morales, San Luis Potosi (*Schaffner*); South Mexico, Zimapan (*Coulter*, 1536, 1538), Chiapas (*Ghiesbreght*, 628).—Andes. Hb. Kew.

Watson has incautiously attributed this species to Bentham and Hooker, who say:—"*C. multiflora*, Baker, cui referenda *Calydorea punctata*, Baker, species includere videtur 2 vel 3, inter se affines sed distinctas."

2. **Nemastylis nana,** S. Wats. in Proc. Am. Acad. xviii. p. 160.

NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 887; *Schaffner*, 539 Hb. Kew.

3. **Nemastylis punctata,** Hemsley.

Calydorea punctata, Baker in Trimen's Journ. Bot. 1876, p. 188, et Journ. Linn. Soc. Lond. xvi. p. 102.

Gelasine punctata, Herb. in Bot. Mag. sub t. 3779.

SOUTH MEXICO, between Tehuantepec and the Pacific Ocean, Oaxaca (*Andrieux*, 79). Hb. Kew.

4. **Nemastylis tenuis,** Benth. et Hook. Gen. Plant. iii. p. 696; S. Wats. in Proc. Am. Acad. xviii. p. 160.

Chlamydostylus tenuis, Baker in Journ. Linn. Soc. Lond. xvi. p. 107.

Nemastylis cœlestina, Klatt in Linnæa, xxxi. p. 567, ex parte.

NORTH MEXICO, Guajuco, Nuevo Leon (*Palmer*, 2008), Monterey (*Edwards*); SOUTH MEXICO, Aguas Calientes (*Hartweg*), Santa Fé, near the city of Mexico (*Bourgeau*, 416). Hb. Kew.

5. **Nemastylis triflora,** Herb. in Benth. Pl. Hartw. p. 95.

Chlamydostylus triflorus, Baker in Journ. Linn. Soc. Lond. xvi. p. 107.

Chlamydostylus cernuus, Baker in Trimen's Journ. Bot. 1876, p. 186.

GUATEMALA, Comalapa (*Hartweg*), without locality (*Godman & Salvin*). Hb. Kew.

9. ORTHROSANTHUS.

Orthrosanthus, Sweet, Fl. Austral. t. 11; Benth. et Hook. Gen. Plant. iii. p. 697.

Seven species are described; five of them are Australian and one is restricted to South Brazil.

1. **Orthrosanthus chimboracensis,** Baker in Gard. Chron. n. s. vi. p. 67; Journ. Linn. Soc. Lond. xvi. p. 112.

Moræa chimboracensis et *M. acorifolia,* H. B. K. Nov. Gen. et Sp. i. p. 322.

Sisyrinchium moritzianum, Klatt in Linnæa, xxxi. p. 378.

SOUTH MEXICO, Yavezia (*Liebmann*), Chiapas (*Ghiesbreght*); GUATEMALA, summit of Volcan de Agua (*Godman & Salvin*).—ANDES. Hb. Kew.

10. SISYRINCHIUM.

Sisyrinchium, Linn. Gen. Plant. n. 1017; Benth. et Hook. Gen. Plant. iii. p. 698.

A genus of about fifty species, all of which are indigenous in America, inhabiting temperate and tropical regions, both north and south. One species is naturalized in several distant parts of the Old World, and some botanists regard it as indigenous in Ireland. The species need a critical revision.

1. **Sisyrinchium affine,** Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2).

South Mexico, Real del Monte, 8000 feet (*Galeotti*, 5362). Hb. Kew.

This number of Galeotti's collection is referred to *S. iridifolium* in Kew Herbarium.

2. **Sisyrinchium alatum,** Hook. Ic. Pl. t. 219; Baker in Journ. Linn. Soc. Lond. xvi. p. 119.

Guatemala, summit of Volcan de Agua (*Godman & Salvin*); Panama, Volcan de Chiriqui (*Hort. Veitch*).—Rather widely dispersed in South America. Hb. Kew.

3. **Sisyrinchium angustifolium,** Mill. Dict. ed. 6, 1771.

Sisyrinchium bermudiana, Baker in Journ. Linn. Soc. xvi. p. 117, excl. var. 1, non Linn. var. β.
Sisyrinchium gramineum, Curt. Bot. Mag. t. 464; Red. Lil. t. 282.
Sisyrinchium mucronatum, Mich. Fl. Am. Bor. ii. p. 33.
Sisyrinchium anceps, Cav. Diss. vi. p. 345, t. 190. fig. 2; Lodd. Bot. Cab. t. 1220.

North Mexico, Chihuahua (*Potts*); South Mexico, Lagos (*Hartweg*, 222), valley of Cordova (*Bourgeau*, 2093), Zimapan (*Coulter*, 1537).—Widely dispersed in North America, and naturalized in Ireland, Mauritius, Australia, New Zealand, &c.

4. **Sisyrinchium convolutum,** Nocca, Pl. Select. i. t. 1; Red. Lil. t. 47; Baker in Journ. Linn. Soc. Lond. xvi. p. 118.

Echthronema convoluta, Herb. in Bot. Reg. 1843, Misc. p. 85.

South Mexico, Chinantla (*Liebmann*), region of Orizaba (*Bourgeau*, 2852; *Müller*). —Andes. Hb. Kew.

5. **Sisyrinchium hartwegii,** Baker in Journ. Linn. Soc. Lond. xvi. p. 119 (absque descriptione).

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 880); South Mexico, Aguas Calientes (*Hartweg*), region of Orizaba (*Bourgeau*, 2664). Hb. Kew.

6. **Sisyrinchium micranthum,** Cav. Diss. vi. p. 345, t. 191. fig. 2; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 2).

South Mexico, Cerro Ventosa, near Real del Monte 7500 to 8000 feet (*Galeotti*, 5361).

7. **Sisyrinchium scabrum,** Ch. et Schl. in Linnæa, vi. p. 57; Baker in Journ. Linn. Soc. Lond. xvi. p. 117.

South Mexico, Jalapa (*Schiede & Deppe*), peak of Orizaba at 10,000 feet (*Galeotti*, 5375; *Linden*, 226 bis).—Andes. Hb. Kew.

8. **Sisyrinchium schaffneri,** S. Wats. in Proc. Am. Acad. xviii. p. 160.

North Mexico, region of San Luis Potosi (*Schaffner*, 527; *Parry & Palmer*, 881). Hb. Kew.

9. **Sisyrinchium tenuifolium,** Humb. et Bonpl. ex Willd. Hort. Berol. t. 92; Baker in Journ. Linn. Soc. Lond. xvi. p. 118; Red. Lil. t. 275; Bot. Mag. tt. 2117 et 2313.

Echthronema tenuifolia, Herb. in Bot. Reg. Misc. p. 85.

South Mexico, Santa Fé, near the city of Mexico (*Bourgeau*, 415), without locality (*Graham*). Hb. Kew.

10. **Sisyrinchium tinctorium,** H. B. K. Nov. Gen. et Sp. i. p. 324; Baker in Journ. Linn. Soc. Lond. xvi. p. 118.

Marica tinctoria, Ker, Gen. Irid. p. 23.

Sisyrinchium tingens, Steud. Nomencl. Bot. ed. 2.

Sisyrinchium rigidum, Lehm. in Hamb. Gart. Zeit. vi. p. 415.

South Mexico, Chiapas (*Ghiesbreght*, 818), Mirador (*Liebmann*).—Andes. Hb. Kew.

11. **Sisyrinchium,** sp.

North Mexico, Rinconado (*Edwards*). Hb. Kew.

12. **Sisyrinchium,** sp.

South Mexico, Zimapan (*Coulter*, 1539). Hb. Kew.

"Published by Klatt (Linnæa, xxxv. p. 383) as *S. andinum*, Phil., but that is a *Solenomelus* and quite different."—*J. G. Baker.*

13. **Sisyrinchium,** sp.

Mexico, without locality (*Halsted*). Hb. Kew.

Order CXLV. AMARYLLIDEÆ.

Amaryllideæ, Benth. et Hook. Gen. Plant. iii. p. 711.

Sixty-four genera, including about 650 species, widely dispersed in the temperate and tropical regions of both hemispheres. They are especially numerous in the Mediterranean region in South Africa and South America.

1. HYPOXIS.

Hypoxis, Linn. Gen. Plant. n. 417; Benth. et Hook. Gen. Plant. iii. p. 717.

A genus of about fifty species, inhabiting Tropical Asia, Australia, the Mascarene Islands, Tropical and South Africa, and Tropical and North America.

1. **Hypoxis decumbens,** Linn. Amœn. Acad. v. p. 396, et Sp. Pl. ed. 2, p. 439; Mart. Fl. Bras. iii. p. 51, t. 7. fig. 1; Griseb. Fl. Brit. W. Ind. p. 585; Baker in Journ. Linn. Soc. Lond. xvii. p. 107; Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 3).

Anthericum sessile, Miller, Fig. Pl. t. 39. fig. 2.

Hypoxis mexicana, Rœm. et Schult. Syst. Veg. vii. p. 761.

Hypoxis gracilis, Rœm. et Schult. l. c. p. 764.
Hypoxis pusilla, H. humilis, H. breviscapa, et *H. elongata*, H. B. K. Nov. Gen. et Sp. i. pp. 286, 287.

ARIZONA.—NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Schaffner*, 545; *Parry & Palmer*, 871); SOUTH MEXICO, Zacuapan, Vera Cruz (*Linden*, 37), Jalapa. Mirador, &c. (*Galeotti*, 5371, 5373), Zimapan (*Coulter*, 1546), Santa Fé, valley of Mexico, and region of Orizaba (*Bourgeau*, 654, 2830).—COLOMBIA to PERU and BUENOS AYRES, and throughout the WEST INDIES. Hb. Kew.

2. COOPERIA.

Cooperia, Herb. in Bot. Reg. t. 1835; Benth. et Hook. Gen. Plant. iii. p. 722.

A genus of two species, inhabiting the Texano-Mexican region.

1. **Cooperia drummondii**, Herb. in Bot. Reg. t. 1835; Kth. Enum. Pl. v. p. 478; Baker in Trimen's Journ. Bot. 1878, p. 166.
Cooperia chlorosolen, Herb. in Bot. Mag. t. 3482.
Cooperia mexicana, Herb. Amaryll. p. 182.

TEXAS.—NORTH MEXICO, Nuevo Leon (*Wright*, 1902), without locality (*Gregg*, 84). Hb. Kew.

3. CHLIDANTHUS.

Chlidanthus, Herb. App. p. 46, et Amaryll. p. 190, t. 27; Benth. et Hook. Gen. Plant. iii. p. 723.

Two or three species inhabiting Tropical America, the exact parts being uncertain.

1. **Chlidanthus ehrenbergii.**
Coleophyllum ehrenbergii, Klotzsch in Otto and Dietr. Allg. Gart. Zeit. viii. p. 185.

MEXICO (*Ehrenberg*).

4. ZEPHYRANTHES.

Zephyranthes, Herb. App. p. 36, et Amaryll. p. 170, tt. 24, 29 et 35; Benth. et Hook. Gen. Plant. iii. p. 723.

There are nearly twenty species in America, ranging from Texas to Buenos Ayres, and one in West Tropical Africa.

1. **Zephyranthes carinata**, Herb. in Bot. Mag. t. 2594, et Amaryll. p. 173; S. Wats. in Proc. Am Acad. Sc. xviii. p. 161.
Zephyranthes grandiflora, Herb. in Bot. Reg. t. 902 (*quoad florem nec quoad folia et semina*).

SOUTH MEXICO, Real del Monte and Cerro Ventoso (*Lagasca*), Guanajuato (*Dugès*).

2. **Zephyranthes concolor**, Benth. et Hook. Gen. Plant. iii. p. 724, in nota sub *Sprekelia*; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 161.
Hippeastrum concolor, Baker in Trimen's Journ. Bot. 1878, p. 82.
Habranthus concolor, Lindl. in Proc. Hort. Soc. Lond. 1838, p. 8; Bot. Reg. 1845, t. 54; Kth. Enum. v. p. 500; Benth. Pl. Hartw. p. 25.

SOUTH MEXICO, Leon (*Hartweg*); NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Schaffner*, 540 *b*; *Parry & Palmer*, 869). Hb. Kew.

3. **Zephyranthes longifolia,** Hemsley, Diag. Pl. Nov. pars 3, p. 55 (1880).

Foliis pluribus synanthiis quam scapi sæpissime longioribus angustissimis, scapis 1–2, floribus mediocribus fere rectis flavis vel extus cupreis quam pedunculi duplo longioribus, spatha apice primum indivisa, perianthii segmentis liberis, staminibus inclusis, stylo alte trifido.

Herba bulbosa, bulbo tunicato subgloboso vel ovato, 1–1½ poll. diametro, tunicis exterioribus supra collum longiuscule productis. *Folia* sæpe 3–6, synantha, scapo sæpissime longiora, angustissima (in siccis fere filiformia), usque 9–12 poll. longa, obtusa. *Scapi* 1–2, crassiusculi, 1-flori, 4–6 poll. longi. *Flores* flavi vel extus cuprei, minus quam 1 poll. longi, fere recti; pedunculus circiter semipollicaris; spatha alba, membranacea, diaphana, apice primum indivisa, longe acuminata; perianthii segmenta libera, ovato-oblonga, acuminata; stamina inclusa; stylus alte trifidus, stamina æquans. *Capsula* sphæroidea, triloba, 5–6 lineas diametro.—*Z. aurea,* S. Wats. in Proc. Am. Acad. xviii. (1883), p. 161.

TEXAS; NEW MEXICO; ARIZONA.—NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 870). Hb. Kew.

4. **Zephyranthes nervosa,** Herb. Amaryll. p. 172; Kth. Enum. v. p. 483.

Amaryllis nervosa, H. B. K. Nov. Gen. et Sp. i. p. 278.

SOUTH MEXICO, Campeachy (*Humboldt & Bonpland*).—VENEZUELA.

5. **Zephyranthes pallida,** Rœm. Synop. Monogr., Amaryll. p. 124; Kth. Enum. v. p. 487; Baker in Trimen's Journ. Bot. 1878, p. 166.

Zephyranthes lindleyana, Herb. Amaryll. p. 174, t. 35. fig. 5; Kth. Enum. v. p. 486.
Zephyranthes grandiflora, Lindl. Bot. Reg. t. 902 (*quoad folia et semina nec quoad florem*).
Zephyranthes lilacina, Liebm. Ind. Sem. Hort. Havn. 1844; Linnæa, xviii. p. 509?
Zephyranthes nervosa, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 4), nec Herb.

SOUTH MEXICO, Mirador, 3000 feet (*Galeotti*, 5415), valley of Cordova (*Bourgeau*, 2273). Hb. Kew.

6. **Zephyranthes sessilis,** Herb. Amaryll. p. 175 (varietates); Baker in Trimen's Journ. Bot. 1878, p. 166; Refug. Bot. t. 212.

Zephyranthes verecunda, Herb. in Bot. Mag. t. 2583; Refug. Bot. t. 356.
Zephyranthes striata, Herb. in Bot. Mag. t. 2593.
Zephyranthes grahamiana, Herb. Amaryll. p. 175, t. 29. fig. 2.
Zephyranthes akermannia, Rœm. Synop. Monogr., Amaryll. p. 124.

SOUTH MEXICO, Leon and Lagos (*Hartweg*, 220), Tacubaya (*Graham*, 358); GUATEMALA. Hb. Kew.

5. SPREKELIA.

Sprekelia, Heist. Beschr. von Brunsvigia, p. 19; Benth. et Hook. Gen. Plant. iii. p. 724.

Monotypic.

1. **Sprekelia formosissima,** Herb. App. p. 35, et Amaryll. p. 134, t. 44. fig. 41;

Sweet, Fl. Gard. ser. 2, t. 144; Kth. Enum. v. p. 507; Baker in Trimen's Journ. Bot. 1878, p. 167.

Amaryllis formosissima, Linn. Sp. Pl. ed. 1, p. 293; Bot. Mag. t. 47.
Sprekelia glauca, Lindl. in Bot. Reg. 1840, Misc. p. 65, et 1841, t. 16.
Sprekelia karwinskii, Rœm. Synop. Monogr., Amaryll. p. 144; Kth. Enum. v. p. 508.
Sprekelia ringens, Morr. in Ann. Soc. Hort. Gand, ii. p. 133, t. 60; Kth. Enum. v. p. 509.

South Mexico, Toluca (*Andrieux*, 73), Cerro de Guadalupe (*Bourgeau*, 239), Leon (*Hartweg*). Hb. Kew.

6. HIPPEASTRUM.

Hippeastrum, Herb. App. p. 31, et Amaryll. p. 135; Benth. et Hook. Gen. Plant. iii. p. 724.

An exclusively American genus of upwards of fifty species, ranging from Mexico and the West Indies to Chili and Buenos Ayres.

1. **Hippeastrum equestre,** Herb. App. p. 31, et Amaryll. p. 138; Kth. Enum. v. p. 522; Baker in Trimen's Journ. Bot. 1878, p. 84; Bot. Mag. t. 305 (*Amaryllis*); Griseb. Fl. Brit. W. Ind. p. 584 (*Amaryllis*).

South Mexico, Yucatan (*Johnson*, 85).—Jamaica to Guiana, Brazil, and Chili. Hb. Kew.

7. CRINUM.

Crinum, Linn. Gen. Plant. n. 405; Benth. et Hook. Gen. Plant. iii. p. 726.

Upwards of sixty species of this genus are recorded. They inhabit the tropical and subtropical regions of both America and the Old World, specially affecting sandy maritime situations. A few extend into North America and some into South Africa; and the genus is also represented in Australia.

1. **Crinum americanum,** Linn. Sp. Pl. ed. 1, p. 292; Herb. Amaryll. p. 254; Kth. Enum. v. p. 559; Baker in Gard. Chron. n. s. xvi. p. 398; Bot. Mag. t. 1034.

Florida; Louisiana; Texas.—Mexico, Vera Cruz (ex *Kunth*), San Blas (*Hinds*). Hb. Kew.

2. **Crinum cruentum,** Ker (Gawl.) in Bot. Reg. t. 171; Lodd. Bot. Cab. t. 346; Herb. Amaryll. p. 250; Kth. Enum. v. p. 555; Baker in Gard. Chron. n. s. xvi. p. 40.
Crinum loddigesianum, Herb. Amaryll. p. 253.

South Mexico, San Bartolo and Tlacolola, Oaxaca (*Andrieux*, 74, 75). Hb. Kew.

3. **Crinum erubescens,** Soland. in Ait. Hort. Kew. i. p. 413; Herb. Amaryll. p. 251; Baker in Gard. Chron. n. s. xvi. p. 398; Bot. Mag. t. 1232.

Panama, Chagres (*Fendler*, 436).—Widely diffused in Tropical America. Hb. Kew.

4. **Crinum kunthianum,** Rœm. Synop. Monogr., Amaryll. p. 80; Baker in Gard. Chron. n. s. xvi. p. 398.
Crinum erubescens, H. B. K. Nov. Gen. et Sp. i. p. 279, nec Soland.

Nicaragua, Greytown (*Tate*, 349, 397).—Colombia. Hb. Kew.

8. HYMENOCALLIS.

Hymenocallis, Salisb. in Trans. Hort. Soc. Lond. i. p. 338; Benth. et Hook. Gen. Plant. iii. p. 734.

About thirty species have been proposed, though probably not more than half of them are distinct. They inhabit Tropical and North America.

1. **Hymenocallis adnata,** Herb. Amaryll. p. 215; Kth. Enum. v. p. 677 (varietates δ et ε).

Pancratium mexicanum, Lindl. Bot. Reg. t. 940, nec Linn.
Hymenocallis littoralis, δ. acutifolia, Herb. in Bot. Mag. t. 2621.
Hymenocallis staplesiana, Rœm. Synop. Monogr., Amaryll. p. 175.
Hymenocallis acutifolia, Rœm. *l. c.* p. 174.

MEXICO, region of Orizaba (*Bourgeau,* 2879).—WEST INDIES and Eastern SOUTH AMERICA. Hb. Kew.

2. **Hymenocallis bistubata,** Herb. in Bot. Reg. 1844, Misc. p. 43; Kth. Enum. v. p. 671.

MEXICO or GUATEMALA? (*Hartweg*).

3. **Hymenocallis choretis,** Hemsley.

Choretis glauca, Herb. Amaryll. p. 220, t. 35. fig. 1, et t. 41. fig. 32; Knowles & Westc. Fl. Cab. ii. p. 101, cum icone; Rœm. Synop. Monogr., Amaryll. p. 188.
Hymenocallis glauca, Baker, ex Benth. et Hook. Gen. Plant. iii. p. 734, nec Rœm.

MEXICO.

4. **Hymenocallis glauca,** Rœm. Synop. Monogr., Amaryll. p. 173; Kth. Enum. v. p. 670.

Pancratium glaucum, Zucc. in Abhandl. Baier. Akad. Wiss. ii. (1837), p. 317.

MEXICO (*Karwinski*).

5. **Hymenocallis harrisiana,** Herb. in Bot. Reg. 1840, p. 35; Kth. Enum. v. p. 672.

MEXICO.

6. **Hymenocallis insignis,** Kth. Enum. v. p. 675.

GUATEMALA (*Warscewicz*).

7. **Hymenocallis panamensis,** Lindl. Bot. Reg. 1841, Misc. p. 67; Kth. Enum. v. p. 679.

PANAMA (*Cade*).

8. **Hymenocallis repanda,** Otto & Dietr. Allg. Gart. Zeit. xi. p. 123.

MEXICO (*Ehrenberg*).

9. **Hymenocallis rotata,** Herb. App. p. 44, et Amaryll. p. 217; Kth. Enum. v. p. 679.

Pancratium rotatum, Ker (Gawl.) in Bot. Mag. t. 827; Refug. Bot. t. 357.
Hymenocàllis lacera, Salisb. in Trans. Hort. Soc. Lond. i. p. 338.

Pancratium disciforme, Red. Lil. t. 155 (excl. syn.).
Pancratium mexicanum, Linn. Sp. Pl. ed. 1, p. 290.
Hymenocallis paludosa, Salisb. in Trans. Hort. Soc. Lond. i. p. 338.
Hymenocallis dillenii, Rœm. Synop. Monogr., Amaryll. p. 174.
VIRGINIA to FLORIDA and GEORGIA.—MEXICO.

10. **Hymenocallis skinneriana,** Herb. in Bot. Reg. 1843, Misc. p. 45.
GUATEMALA (*Skinner*).

9. BOMAREA.

Bomarea, Mirb. in Nouv. Dict. Hist. Nat. ed. 1 (1803–4), ? ed. 2, iv. p. 118; Benth. et Hook. Gen. Plant. iii. p. 736.

An exclusively American genus of about fifty species, ranging from Mexico to Chili and Buenos Ayres. The closely allied genus *Alstrœmeria* seems to be restricted to South America.

1. **Bomarea acutifolia,** Herb. Amaryll. p. 112; Rœm. Synop. Monogr., Amaryll. p. 268; Kth. Enum. v. p. 794 (varietates); Bot. Mag. t. 3050.
Alstrœmeria acutifolia, Link et Otto, Ic. Pl. Rar. Hort. Bot. Berol. p. 57, t. 29.
SOUTH MEXICO, peak of Orizaba 7000 to 10,000 feet (*Galeotti,* 5398; *Linden,* 41), Jalapa (*Schiede; Ehrenberg*), Huatusco, Oaxaca (*Liebmann*), Chiapas (*Ghiesbreght*); GUATEMALA, ridge above Calderas at 8300 feet (*Godman & Salvin*). Hb. Kew.

2. **Bomarea affinis,** Kth. Enum. v. p. 796.
Alstrœmeria affinis, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 6).
SOUTH MEXICO, Morelia and Serro de Quinzeo, 5500 to 7000 feet (*Galeotti,* 5395).
Probably the same as *B. acutifolia.*

3. **Bomarea caldasiana,** Herb. Amaryll. p. 119; Rœm. Synop. Monogr., Amaryll. p. 276; Kth. Enum. v. p. 813.
Alstrœmeria caldasiana, H. B. K. Nov. Gen. et Sp. i. p. 283.
GUATEMALA (*Skinner*).—ANDES. Hb. Kew.

4. **Bomarea chontalensis,** Seem. in Gard. Chron. 1871, p. 479; Bot. Mag. t. 5927.
NICARAGUA, Chontales (*Seemann; Tate,* 426). Hb. Kew.

5. **Bomarea hirtella,** Herb. Amaryll. p. 112; Rœm. Synop. Monogr., Amaryll. p. 268; Kth. Enum. v. p. 796.
Alstrœmeria hirtella, H. B. K. Nov. Gen. et Sp. i. p. 284; Sweet, Brit. Fl. Gard. t. 228.
Alstrœmeria gloriosa, Ch. et Schl. in Linnæa, vi. p. 51.
Bomarea gloriosa, Rœm. Synop. Monogr., Amaryll. p. 269.
NORTH MEXICO, Sierra Madre (*Seemann,* 1955); SOUTH MEXICO, Vera Cruz to Orizaba (*Müller,* 1102), between the city of Mexico and Tiangillo, on the Toluca road, at about 8800 feet (*Humboldt & Bonpland*); GUATEMALA (*Godman & Salvin*). Hb. Kew.

Some of the above specimens may belong to *B. ovata*, Mirb., for the limits of the species are not well defined.

6. **Bomarea miniata,** Kth. Enum. v. p. 792.

Alstrœmeria miniata, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 6).

South Mexico, Totutla, near Mirador, at 4000 feet (*Galeotti*, 5399).

7. **Bomarea ovata,** Herb. Amaryll. p. 113; Rœm. Synop. Monogr., Amaryll. p. 269; Kth. Enum. v. p. 798 (varietates).

Alstrœmeria ovata, Cav. Ic. Pl. i. t. 76; Bot. Mag. t. 2848.

Guatemala, Volcan de Fuego (*Salvin*).—Andes. Hb. Kew.

10. POLIANTHES.

Polianthes, Linn. Gen. Plant. n. 426 (errore *Polyanthus,* Hort. Cliff. et Auct. plur.); Benth. et Hook. Gen. Plant. iii. p. 737.

One species, believed to be endemic in Mexico.

1. **Polianthes tuberosa,** Linn. Sp. Pl. ed. 1, p. 316; Trans. Hort. Soc. Lond. i. p. 41, t. 2; Bot. Mag. t. 1817; Red. Lil. t. 147; Bot. Reg. t. 63; Kth. Enum. v. p. 846.

Polianthes gracilis, Link, Enum. Pl. Hort. Berol. Alt. i. p. 330; Link et Otto, Ic. Pl. Sel. Hort. Bot. Berol. p. 55, t. 24.

Polianthes mexicana, Zucc. in Abhandl. Baier. Akad. Wiss. ii. (1837), p. 319.

Mexico. Generally cultivated in America, Asia, and Europe. Only cultivated specimens in Kew herbarium.

Mandon collected it wild in the Andes of Bolivia, near Sorata, "*in pratis subfrigidis,*" at an elevation of about 8000 feet.

[*Polianthes maculata,* Mart. in Amœn. Bot. Monac. p. 19, t. 13; Kth. Enum. v. p. 848, is a doubtful plant. Kunth says, "*Species valde dubia, probabiliter Agave quædam.*"]

11. BRAVOA.

Bravoa, Llav. et Lex. Nov. Veg. Descr. i. p. 6; Benth. et Hook. Gen. Plant. iii. p. 6.

This genus is restricted to Mexico.

1. **Bravoa geminiflora,** Llav. et Lex. Nov. Veg. Descr. i. p. 6; Kth. Enum. v. p. 849; Herb. Amaryll. p. 124, t. 12; Rœm. Synop. Monogr., Amaryll. p. 245.

Bravoa cœtocapnia, Rœm. *l. c.*

Cœtocapnia geminiflora, Link et Otto, Ic. Pl. Rar. Hort. Berol. p. 35, t. 18 (errore in tabula *Zetocapnia*).

South Mexico, Morelia at 7000 feet (*Galeotti*, 5507; *Hartweg*), ravines, valley of Mexico (*Bourgeau*, 414), without locality (*Graham*). Hb. Kew.

2. **Bravoa sessiliflora,** Hemsley, Diag. Pl. Nov. pars 3, p. 54. (Tab. LXXXVI.)

Gracilis, caule fere nudo quam folia duplo triplove longiore, foliis linearibus obtusiusculis, bracteis parvis, floribus sessilibus sæpissime geminis usque bipollicaribus, perianthii tubo angustissimo.

Herba bulbosa (bulbus non visus) sesquipedalis, usque ad bipedalis, omnino glaberrima, caule gracili tereti solido, 6–8-floro. *Folia* anguste lineari-lanceolata, obtusiuscula, inferiora, conferta, adscendentia, vix carnosa, circiter 6-pollicaria, caulina pauca, distantia, sursum gradatim angustiora et breviora, suprema vix pollicaria. *Flores* (albi?) sessiles, sæpissime gemini, usque bipollicares; bracteæ parvæ, ovato-acuminatæ, 4–5 lineas longæ; perianthii tubus angustissimus, plus minus curvus, lobis brevibus ovatis apice leviter inflexis; stamina inclusa; stylus trifidus, inclusus. *Capsula* (matura non visa) pisiformis, globosa.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 867). Hb. Kew.

This species differs from *B. graminiflora* in having longer, narrower, sessile, apparently white flowers.

EXPLANATION OF TAB. LXXXVI.

A plant, natural size. Fig. 1, a flower, slightly enlarged; 2, the same, more enlarged and laid open; 3, an anther, and 4, a cross section of an ovary, enlarged.

12. BESCHORNERIA.

Beschorneria, Kth. Enum. Plant. v. p. 844; Benth. et Hook. Gen. Plant. iii. p. 738.

This genus also is endemic in Mexico.

1. **Beschorneria tonelii,** Jacobi in Otto's Hamb. Gart. Zeit. xx. p. 503, absque descriptione; Bot. Mag. t. 6091.

Mexico. Cultivated specimens only in Kew herbarium. Hort. Kew.

2. **Beschorneria tubiflora,** Kth. Enum. v. p. 844; Bot. Mag. t. 4642; Regel, Gartenflora, xxiv. p. 355, t. 851.

Furcræa (*Fourcroya*) *tubiflora,* Kth. et Bouché, Ind. Sem. Hort. Berol. 1845; Rœm. Synop. Monogr., Amaryll. p. 295.

Mexico (*Ehrenberg*). Cultivated specimens only in Kew herbarium.

3. **Beschorneria yuccoides,** Hook. Bot. Mag. t. 5203.

Mexico. Hort. Kew.

13. AGAVE.

Agave, Linn. Gen. Plant. n. 431; Benth. et Hook. Gen. Plant. iii. p. 733.

Upwards of 130 species were retained by Jacobi; but many of them were established on young cultivated plants, the flowers of which were unknown; and Baker reduces the number to 109. Generally speaking, we have followed the latter author, the exceptions being reductions made from descriptions alone, together with a few assumed varieties that have since proved distinct species. They are all endemic in America, and most numerous in Mexico, though ranging from the Southern States of N. America southward to Brazil. One species, *A. americana*, is naturalized in many parts of the Old World.

1. **Agave (Littæa) albicans,** Jacobi, Vers. syst. Ord. Agav.* p. 137; Baker in Gard. Chron. n. s. viii. p. 717. fig. 138.

Agave ousselghemiana, Jacobi in Abhandl. Schles. Gesell. 1869, p. 156, ex Baker.
Agave concinna, Hort. Angl. ex Baker.
Agave micrantha, β. albidior, Salm-D. in Bonplandia, 1859, p. 87.

Mexico. Introduced into European gardens. Hort. Kew.

2. **Agave (Euagave) americana,** Linn. Sp. Pl. ed. 1, p. 323; Andr. Bot. Rep. t. 433; Bot. Mag. t. 3654; Griseb. Fl. Brit. W. Ind. p. 582; Jacobi, Vers. syst. Ord. Agav. p. 63; Baker in Gard. Chron. n. s. viii. p. 201.

Agave milleri, Haw. Synop. Pl. Succ. p. 71.
Agave picta, Salm-D. in Bonplandia, 1859, p. 88; Jacobi, Vers. syst. Ord. Agav. p. 67.
Agave ornata, Jacobi, *l. c.* p. 69.
Agave fuerstenbergii et *Agave expansa,* Jacobi, ex Baker, *l. c.*

Texas; New Mexico.—North Mexico, Monclova, Coahuila (*Palmer*, 1313); South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 1399).—West Indies. Hb. Kew., Hort. Kew.

3. **Agave (Littæa) angustissima,** Engelm. in Trans. Acad. Sc. St. Louis, iii. (reprint, p. 18, in nota); Baker in Gard. Chron. n. s. vii. p. 303.

South Mexico, Ocotillo, in the direction of Tepic (*Gregg*).

4. **Agave applanata,** Lemaire ex Jacobi, Vers. syst. Ord. Agav. pp. 48 et 219; Baker in Gard. Chron. n. s. vii. p. 717, fig. 115; Todar. Hort. Panor. ii. t. 30.

Mexico. Hort. Kew.

5. **Agave asperrima,** Jacobi, Vers. syst. Ord. Agav. p. 61; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 162.

North Mexico, San Lorenzo de Coahuila (*Palmer*, 1309).

Baker refers this to *A. salmiana*; but Watson (*loc. cit.*) states that it proves to be a very distinct species.

6. **Agave atrovirens,** Karw. ex Salm-D. Hort. Dyck. p. 302, et in Bonplandia, 1859, p. 87; Jacobi, Vers. syst. Ord. Agav. p. 55.

Mexico. Hort. Kew.

7. **Agave (Littæa) attenuata,** Salm-D. Hort. Dyck. p. 303; Jacobi, Vers. syst. Ord. Agav. pp. 176 et 261; Rev. Hort. 1876, p. 149, figg. 31 et 32; Baker in Gard. Chron. n. s. viii. p. 748.

Agave glaucescens, Hook. Bot. Mag. t. 5333; Jacobi, *l. c.* p. 139.

Mexico. Hb. Kew., Hort. Kew.

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* "Versuch zu einer systematischen Ordnung der Agaveen." A reprint from Otto's 'Hamburger Garten und Blumen Zeitung,' 1864–67.

8. **Agave bernhardi,** Jacobi, Nachtr. i. p. 38; Baker in Gard. Chron. n. s. viii. p. 717.

MEXICO?

9. **Agave (Littæa) botterii,** Baker in Bot. Mag. t. 6248, et in Gard. Chron. n. s. viii. p. 264, fig. 54; Bull. Soc. Tosc. 1878, p. 240.

MEXICO (*Botteri*).

10. **Agave (Littæa) bouchei,** Jacobi, Vers. syst. Ord. Agav. p. 120; Baker in Gard. Chron. n. s. viii. p. 717.

MEXICO? Hort. Kew.

11. **Agave (Manfreda) brachystachys,** Cav. Descr. p. 453; Kth. Enum. v. p. 829; Jacobi, Vers. syst. Ord. Agav. p. 184.

Agave spicata, DC. Cat. Hort. Monsp. 1813, p. 74; Red. Lil. t. 485, nec Cav.

Agave polyanthoides, Ch. et Schl. in Linnæa, vi. p. 55, ex Baker; Hort. Monac. ex Jacobi, nec Ch. et Schl.

Agave saponaria, Lindl. Bot. Reg. 1838, Misc. p. 76, et 1839, t. 55.

Agave humilis, Rœm. Synop. Monogr., Amaryll. p. 285.

SOUTH MEXICO, Zimapan (*Coulter*, 1555), Hacienda de la Laguna (*Schiede & Deppe*). Hb. Kew.

12. **Agave bracteosa,** S. Wats. in Proc. Am. Acad. xviii. p. 162.

NORTH MEXICO, Monterey, Nuevo Leon (*Palmer*).

13. **Agave brauniana,** Jacobi, Vers. syst. Ord. p. 240; Baker in Gard. Chron. n. s. viii. p. 717.

NORTH MEXICO, San Luis Potosi. Hort. Kew.

14. **Agave bromeliæfolia,** Salm-D. Hort. Dyck. p. 303; Kth. Enum. v. p. 834; Jacobi, Vers. syst. Ord. Agav. p. 164; Baker in Gard. Chron. n. s. viii. p. 780.

Agave teoxamulina, Karw. Rœm. Synop. Monogr., Amaryll. p. 292.

SOUTH MEXICO, Teascomulco (*Karwinski*). Hort. Kew.

15. **Agave bulbifera,** Salm-D. Hort. Dyck. p. 303; Jacobi, Vers. syst. Ord. Agav. p. 163; Kth. Enum. v. p. 834.

SOUTH MEXICO, Santiago (*Karwinski*).

16. **Agave canartiana,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 147.

MEXICO?

17. **Agave celsii,** Hook. Bot. Mag. t. 4934; Jacobi, Vers. syst. Ord. Agav. p. 165 (*celsiana*); Baker in Gard. Chron. n. s. viii. p. 620 (*celsiana*).

MEXICO. Hort. Kew.

18. **Agave chiapensis,** Jacobi, Vers. syst. Ord. Agav. p. 235; Baker in Gard. Chron. n. s. viii. p. 490, sub *A. polyacantha.*

SOUTH MEXICO, Chiapas (*Ghiesbreght*).

19. **Agave (Littæa) chloracantha,** Salm-D. in Bonplandia, 1859, p. 93; Jacobi, Vers. syst. Ord. Agav. p. 167; Baker in Gard. Chron. n. s. viii. p. 717.

MEXICO?

20. **Agave cinerascens,** Jacobi, Vers. syst. Ord. Agav. p. 51.

MEXICO?

21. **Agave coarctata,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 147.

MEXICO.

22. **Agave coccinea,** Roezl in Jacobi, Vers. syst. Ord. Agav. p. 76; Baker in Gard. Chron. n. s. viii. p. 201.

MEXICO (*Roezl*). Hort. Kew.

23. **Agave cochlearis,** Jacobi, Nachtr. ii. p. 67; Baker in Gard. Chron. n. s. vii. p. 718.

MEXICO?

24. **Agave concinna,** Baker in Gard. Chron. n. s. viii. p. 137.

MEXICO?

25. **Agave conduplicata,** Jacobi et Bouché in Jacobi's Vers. syst. Ord. Agav. p. 192.

MEXICO (*Ehrenberg*).

26. **Agave (Littæa) dasylirioides,** Jacobi et Bouché in Jacobi's Vers. syst. Ord. Agav. p. 150; Baker in Gard. Chron. n. s. viii. p. 557, fig. 111; Bot. Mag. t. 5716. *Agave dealbata,* Lemaire ex Jacobi, Vers. syst. Ord. Agav. 152.

MEXICO. Hb. Kew., Hort. Kew.

27. **Agave decaisneana,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 153; Baker in Gard. Chron. n. s. viii. p. 264.

MEXICO.

28. **Agave deflexispina,** Jacobi, Nachtr. ii. p. 72; Baker in Gard. Chron. n. s. vii. p. 718, sub *A. salmiana.*

MEXICO?

29. **Agave demeesteriana,** Jacobi, Vers. syst. Ord. Agav. p. 218; Baker in Gard. Chron. n. s. vii. p. 620.

MEXICO?

30. **Agave (Littæa) densiflora,** Hook. Bot. Mag. t. 5006; Jacobi, Vers. syst. Ord. Agav. pp. 123 et 247; Baker in Gard. Chron. n. s. viii. p. 490.

MEXICO. Hort. Kew.

31. **Agave (Littæa) ehrenbergiana,** Jacobi, Vers. syst. Ord. Agav. p. 136; Baker in Gard. Chron. n. s. viii. p. 620.

MEXICO (*Ehrenberg*).

32. **Agave (Littæa) elemeetiana,** Jacobi, Vers. syst. Ord. Agav. p. 178; Baker in Gard. Chron. n. s. viii. p. 748, fig. 145; Refug. Bot. t. 163.

MEXICO. Hort. Kew.

33. **Agave ensifera,** Jacobi, Nachtr. p. 14; Baker in Gard. Chron. n. s. vii. p. 368, sub *A. univittata.*

MEXICO.

34. **Agave excelsa,** Jacobi, Vers. syst. Ord. Agav. p. 238; Baker in Gard. Chron. n. s. viii. p. 397.

HONDURAS. Hort. Kew.

35. **Agave falcata,** Engelm. in Trans. Acad. Sc. St. Louis, iii. (reprint, p. 16); Proc. Am. Acad. Sc. xviii. p. 162; Baker in Gard. Chron. n. s. viii. p. 556, sub *A. californica*, Jacobi.

NORTH MEXICO, Saltillo and Buena Vista (*Wislizenus & Gregg*), Parras, Coahuila (*Palmer*, 1314).

Baker unites this without hesitation with *A. californica*, Jacobi (in Abhandl. Schles. Gesell. 1869, p. 162), a species founded upon a plant in Kew Gardens, recorded from California; but even if it be the same, there would seem to be an error respecting the origin of the Kew plant that would justify the selection of Engelmann's name.

36. **Agave fenzliana,** Jacobi, Vers. syst. Ord. Agav. p. 221; Baker in Gard. Chron. n. s. vii. p. 720, sub *A. hookeri.*

Agave hookeri, J. G. Baker in Bot. Mag. t. 6589, nec Jacobi, fide N. E. Browne in Gard. Chron. n. s. xix. p. 507.

MEXICO.

37. **Agave ferox,** K. Koch, Wochenschrift, 1860, p. 23; Jacobi, Vers. syst. Ord. Agav. p. 75; Baker in Gard. Chron. n. s. viii. p. 40.

MEXICO. Hort. Kew.

38. **Agave filifera,** Salm-D. Hort. Dyck. p. 309; Bonplandia, 1859, p. 94; Jacobi, Vers. syst. Ord. Agav. p. 35; Baker in Gard. Chron. n. s. vii. p. 303; Ill. Hort. 1860, t. 243.

MEXICO. Hort. Kew.

Var. **filamentosa,** Baker in Gard. Chron. n. s. vii. p. 303; Refug. Bot. t. 164 (species); Salm-D. in Bonplandia, 1859, p. 94; Jacobi, Vers. syst. Ord. Agav. pp. 36 et 199.

MEXICO. Hort. Kew.

39. **Agave flaccida,** Jacobi, Vers. syst. Ord. Agav. p. 226; Baker in Gard. Chron. n. s. viii. p. 137, fig. 26.

MEXICO ?

40. **Agave galeotti,** Baker in Gard. Chron. n. s. viii. p. 40.

MEXICO.

41. **Agave (Littæa) geminiflora,** Ker (Gawl,) in Brande's Journ. iii. t. 1; Bot. Reg. t. 1145; Spin in Suppl. Cat. Hort. Sebast. (1823), p. 8, cum icone; Jacobi, Vers. syst. Ord. Agav. p. 160; Baker in Gard. Chron. n. s. viii. p. 620.

Littæa geminiflora, Tagliabue in Bibl. Ital. i. p. 100.

MEXICO. Hort. Kew.

42. **Agave ghiesbreghtii,** Lemaire ex Jacobi, Vers. syst. Ord. Agav. p. 42; Baker in Gard. Chron. n. s. vii. p. 621, fig. 100.

MEXICO. Hort. Kew.

43. **Agave (Littæa) gœppertiana,** Jacobi, Vers. syst. Ord. Agav. pp. 243 et 307; Baker in Gard. Chron. n. s. viii. p. 682.

MEXICO. Hort. Kew.

44. **Agave gracilis,** Jacobi, Nachtr. ii. p. 66; Baker in Gard. Chron. n. s. vii. p. 718, sub *A. salmiana.*

MEXICO.

45. **Agave (Manfreda) guttata,** Jacobi et Bouché in Jacobi, Vers. syst. Ord. Agav. p. 190; Baker in Gard. Chron. n. s. viii. p. 808; Proc. Am. Acad. xviii. p. 161. (Tab. LXXXVII.)

NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer,* 865; *Schaffner,* 505), without locality (*Ehrenberg*). Hb. Kew.

46. **Agave (Littæa) haseloffi,** Jacobi, Vers. syst. Ord. Agav. p. 244; Baker in Gard. Chron. n. s. viii. p. 683.

MEXICO? Hort. Kew.

47. **Agave heteracantha,** Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p. 675; Kth. Enum. v. p. 836; Rœm. Synop. Monogr., Amaryll. p. 291; Jacobi, Vers. syst. Ord. Agav. p. 41; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 18, nec Baker, in Gard. Chron. n. s. vii. p. 369.

Agave poselgerii, Salm-D. in Bonplandia, 1859, p. 92; Baker in Gard. Chron. n. s. vii. p. 527.

Agave lechuguilla, Torr. Bot. U.S. & Mex. Bound. Surv. p. 213 (errore *lecheguilla,* fide Engelmann).

TEXAS.—NORTH MEXICO. Hort. Kew.

The plant cultivated in this country is apparently not the true *A. heteracantha,* for Engelmann saw the original in flower at Munich, and identified it with *A. lechuguilla* of Torrey.

48. **Agave hookeri,** Jacobi, Vers. syst. Ord. Agav. p. 219, nec Baker in Gard. Chron. n. s. vii. p. 718, nec Bot. Mag. t. 6589, vide N. E. Browne, in Gard. Chron. n. s. xix. p. 507.

MEXICO. Hort. Kew.

49. **Agave (Littæa) horizontalis,** Jacobi in Abhandl. Schles. Gesell. 1869, n. 80, p. 148 bis; Baker in Gard. Chron. n. s. viii. p. 682.
MEXICO ?

50. **Agave horrida,** Lemaire ex Jacobi, Vers. syst. Ord. Agav. pp. 43 et 207, et in Abhandl. Schles. Gesell. 1869, p. 140; Baker in Gard. Chron. n. s. vii. p. 621.
MEXICO. Hort. Kew.

51. **Agave houlletii,** Jacobi, Vers. syst. Ord. Agav. p. 256; Baker in Gard. Chron. n. s. viii. p. 557.
MEXICO ? Hort. Kew.

52. **Agave humboldtiana,** Jacobi, Vers. syst. Ord. Agav. p. 251; Baker in Gard. Chron. n. s. viii. p. 682.
NORTH MEXICO, San Luis Potosi. Hort. Kew.

53. **Agave inæquidens,** K. Koch, Wochenschrift, 1860, p. 28; Jacobi, Vers. syst. Ord. Agav. p. 53; Baker in Gard. Chron. n. s. vii. p. 718, sub *A. hookeri.*
MEXICO ?

54. **Agave jacobiana,** Salm-D. in Bonplandia, 1859, p. 88; Jacobi, Vers. syst. Ord. Agav. p. 57; Baker in Gard. Chron. n. s. vii. p. 718.
MEXICO. Hort. Kew.

55. **Agavea kerchovei,** Lemaire, Ill. Hort. 1864, p. 64; Jacobi, Vers. syst. Ord. Agav. p. 213; Baker in Gard. Chron. n. s. vii. p. 527.
Agave beaucarnei, Lemaire, l. c. p. 65.
MEXICO. Hort. Kew.

56. **Agave kewensis,** Jacobi, Vers. syst. Ord. Agav. p. 242; Baker in Gard. Chron. n. s. viii. p. 682.
MEXICO. Hort. Kew.

57. **Agave kochii,** Jacobi, Vers. syst. Ord. Agav. p. 211; Baker in Gard. Chron. n. s. vii. p. 527, sub *A. xylacantha.*
Agave amurensis, Jacobi, l. c. p. 46.
MEXICO.

58. **Agave laurentiana,** Jacobi, Vers. syst. Ord. Agav. p. 254; Baker in Gard. Chron. n. s. vii. p. 620.
MEXICO.

59. **Agave legrelliana,** Jacobi, Vers. syst. Ord. Agav. p. 253; Baker in Gard. Chron. n. s. viii. p. 253, sub *A. ehrenbergii.*
MEXICO.

60. **Agave lehmanni,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 146; Baker in Gard. Chron. n. s. vii. p. 718, sub *A. salmiana.*

MEXICO?

61. **Agave lindleyi,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 152 bis; Baker in Gard. Chron. n. s. viii. p. 620.

MEXICO?

62. **Agave lophanta,** Schiede in Linnæa, iv. p. 582 (nomen tantum); K. Koch, Wochenschrift, 1860, p. 46; Jacobi, Vers. syst. Ord. Agav. p. 39; Baker in Gard. Chron. n. s. vii. p. 368.

SOUTH MEXICO, Malpays de Naulingo (*Schiede*). Hort. Kew.

Var. **cærulescens,** Jacobi, Cat. ii. p. 3; Salm-D. in Bonplandia, 1859, p. 92 (species); Jacobi, Vers. syst. Ord. Agav. p. 38.

MEXICO.

63. **Agave (Euagave) lurida,** Ait.; Bot. Mag. t. 1522; Kth. Enum. v. p. 825; Jacobi, Vers. syst. Ord. Agav. p. 109; Baker in Gard. Chron. n. s. viii. p. 264.

Agave vera-cruz, Mill. Gard. Dict. ed. vi. no. 7.
Agave veræ-crucis, Jacobi, l. c. p. 111.

MEXICO. Hort. Kew.

Var. **jacquiniana,** Gawl.; Schult. Syst. Veg. vii. p. 727 (species); Bot. Mag. t. 5097; Jacobi, Vers. syst. Ord. Agav. p. 96.

Agave lurida, Jacq. Coll. Bot. iv. p. 94, t. 1.

MEXICO. Hort. Kew.

64. **Agave macroacantha,** Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p. 676; Jacobi, Vers. syst. Ord. Agav. p. 92; Baker in Gard. Chron. n. s. viii. p. 137.

Agave besseriana, Hort. Belg.; Jacobi, l. c. p. 92; Bot. Mag. t. 5940.
Agave flavescens, Salm-D. Hort. Dyck. p. 8, et in Bonplandia, 1859, p. 90; Jacobi, l. c. p. 91.
Agave subfalcata et *Agave linearis,* Jacobi in Abhandl. Schles. Gesell. 1870–71, pp. 75 et 76.

MEXICO, Cerro Colorado, near Tehuacan &c., at 5000 to 6000 feet (*Besserer; Karwinski*). Hort. Kew.

65. **Agave (Manfreda) maculata,** Regel, Ind. Sem. Hort. Petrop. 1856, p. 16, et Gartenflora, 1857, p. 158, et 1858, p. 314; Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 13; Baker in Gard. Chron. n. s. viii. p. 807.

Agave maculosa, Hook. in Bot. Mag. t. 5122.

TEXAS.—NORTH MEXICO, Monterey (*Eaton & Edwards*). Hb. Kew., Hort. Kew.

66. **Agave maigretiana,** Jacobi, Vers. syst. Ord. Agav. p. 215.

MEXICO?

67. **Agave martiana,** K. Koch, Wochenschrift, 1860, p. 38; Jacobi, Vers. syst. Ord. Agav. p. 116; Baker in Gard. Chron. n. s. viii. p. 683.

MEXICO.

68. **Agave maximiliana,** Baker in Gard. Chron. n. s. viii. p. 201.

MEXICO? Hort. Kew.

69. **Agave (Euagave) megalacantha,** Hemsl. Diag. Pl. Nov. Mex. pars 3, p. 55. (Tab. LXXXVIII. A.)

Affinis *A. scolymo*, sed differt foliis brevioribus latioribus, spinis maximis basi valde dilatatis, floribus minoribus, perianthii segmentis longioribus angustioribus.

SOUTH MEXICO, Pedregal, valley of Mexico (*Bourgeau*, 1020 bis). Hb. Kew.

70. **Agave melanacantha,** Lemaire; Jacobi, Vers. syst. Ord. Agav. p. 117; Baker in Gard. Chron. n. s. viii. p. 620.

MEXICO?

71. **Agave (Euagave) mexicana,** Lam. Encycl. i. p. 52, excl. var. β; Jacobi, Vers. syst. Ord. Agav. pp. 99 et 304; Baker in Gard. Chron. n. s. viii. p. 201.

Agave magui, Desf. Tabl. de l'Ecole, ed. 2, p. 33.
Agave keratto, Salm-D. Hort. Dyck. p. 304, et in Bonplandia, 1859, p. 88.
Agave polyphylla, K. Koch, Wochenschrift, 1860, p. 38.
Agave cyanophylla, Jacobi, l. c. p. 288.
Agave beauleriana, Jacobi in Abhandl. Schles. Gesell. 1869, p. 150.

MEXICO. Hort. Kew.

72. **Agave (Littæa) micracantha,** Salm-D. in Bonplandia, 1859, p. 93; Jacobi, Vers. syst. Ord. Agav. p. 135; Baker in Gard. Chron. n. s. viii. p. 717; Refug. Bot. t. 327.

MEXICO. Hort. Kew.

73. **Agave miradorensis,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 156; Baker in Gard. Chron. n. s. viii. p. 264.

Agave desmettiana, Jacobi, Vers. syst. Ord. Agav. p. 241.

MEXICO. Hort. Kew.

74. **Agave (Littæa) mitis,** Salm-D. in Bonplandia, 1859, p. 93; Jacobi, Vers. syst. Ord. Agav. p. 134; Baker in Gard. Chron. n. s. viii. p. 717.

Agave oblongata, Jacobi in Abhandl. Schles. Gesell. 1869, p. 155.

MEXICO. Hort. Kew.

75. **Agave mitræformis,** Jacobi in Abhandl. Schles. Gesell. 1859, p. 145.

MEXICO? Hort. Kew.

76. **Agave muilmanni,** Jacobi in Abhandl. Schles. Gesell. 1870–71, p. 76; Baker in Gard. Chron. n. s. viii. p. 683.

MEXICO?

77. **Agave nissoni,** Baker in Gard. Chron. n. s. vii. p. 528.
MEXICO. Hort. Kew.

78. **Agave ottonis,** Jacobi, Vers. syst. Ord. Agav. p. 263.
MEXICO.

79. **Agave parryi,** Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 23; Baker in Gard. Chron. n. s. viii. p. 40.
ARIZONA.—NORTH MEXICO, within our limits near Silver City.

80. **Agave (Littæa) parviflora,** Torr. Bot. U.S. & Mex. Bound. Surv. p. 214; Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 18; Baker in Gard. Chron. n. s. vii. p. 303.
ARIZONA.—NORTH MEXICO, Sonora.

81. **Agave paucifolia,** Baker in Gard. Chron. n. s. x. p. 266.
MEXICO?

82. **Agave peacockii,** Croucher in Gard. Chron. 1873, p. 1400, t. 283, et n. s. vii. p. 621.
SOUTH MEXICO, Tehuacan (*Roezl*).

83. **Agave polyacantha,** Haworth, Rev. Pl. Succ. p. 35; Koch, Wochenschrift, 1860, p. 38; Jacobi, Vers. syst. Ord. Agav. p. 73; Baker in Gard. Chron. n. s. vii. p. 490.
Agave xalapensis, Roezl in Jacobi, Vers. syst. Ord. Agav. p. 72.
Agave uncinata, Jacobi, l. c. p. 104.
Agave chiapensis, Jacobi, l. c. p. 235, et in Abhandl. Schles. Gesell. 1870–71, p. 80.
MEXICO. Hort. Kew.

84. **Agave potatorum,** Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p. 674; Jacobi, Vers. syst. Ord. Agav. p. 78; Baker in Gard. Chron. n. s. viii. p. 40.
MEXICO. Hort. Kew.

85. **Agave pruinosa,** Lemaire in Jacobi, Vers. syst. Ord. Agav. p. 168; Baker in Gard. Chron. n. s. viii. p. 748.
Agave debaryana, Jacobi in Abhandl. Schles. Gesell. 1869, p. 164.
Agave kellocki, Jacobi, l. c. p. 165.
MEXICO. Hort. Kew.

86. **Agave pubescens,** Regel et Ortgies, Gartenflora, 1874, p. 227, t. 804; Baker in Gard. Chron. n. s. viii. p. 807.
MEXICO (*Roezl*).

87. **Agave pugioniformis,** Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p. 676; Kunth, Enum. v. p. 836; Jacobi, Vers. syst. Ord. Agav. p. 142; Baker in Gard. Chron. n. s. viii. p. 780.
MEXICO.

88. **Agave regia,** Baker in Gard. Chron. n. s. viii. p. 620.
MEXICO? Hort. Kew.

89. **Agave (Manfreda) revoluta,** Klotzsch in Otto & Dietr. Allg. Gart. Zeit. 1840, p. 274; Kunth, Enum. v. p. 830; Jacobi, Vers. syst. Ord. Agav. p. 189; Baker in Gard. Chron. n. s. viii. p. 808; Torr. Bot. U.S. & Mex. Bound. Surv. p. 215; Proc. Am. Acad. Sc. xviii. p. 162.
MEXICO. Hort. Kew.

90. **Agave rigida,** Miller, Dict. ed. 8; Jacobi, Vers. syst. Ord. Agav. p. 94; Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 28; Baker in Gard. Chron. n. s. viii. p. 397 (varietates).
Fourcroya rigida, Haworth, Synop. Pl. Succ. p. 74.
Agave angustifolia, Haworth, Rev. Pl. Succ. p. 35.
Agave elongata et *A. fourcroyoides,* Jacobi, Vers. syst. Ord. Agav. pp. 107 et 108.
Agave ixtli, Karw. in Hort. Dyck. p. 304.
Agave karwinskii, Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p. 677.
Agave ixtlioides, Hook. Bot. Mag. t. 5893.
Agave sisalana, Perrine? ex Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 28.
MEXICO. Hort. Kew.

91. **Agave rigidissima,** K. Koch, Wochenschrift, 1869, p. 179; Jacobi in Verhandl. Schles. Gesell. 1870–71, p. 66.
MEXICO?

92. **Agave roezliana,** Baker in Gard. Chron. n. s. vii. p. 528, fig. 79.
MEXICO. Hort. Kew.

93. **Agave rubescens,** Salm-D. Hort. Dyck. p. 306; Kunth, Enum. v. p. 835; Jacobi, Vers. syst. Ord. Agav. p. 143; Baker in Gard. Chron. n. s. viii. p. 780.
MEXICO.

94. **Agave rudis,** Lemaire; Jacobi, Vers. syst. Ord. Agav. p. 118; Baker in Gard. Chron. n. s. viii. p. 620.
MEXICO?

95. **Agave rubrocincta,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 153.
MEXICO.

96. **Agave (Littæa) rupicola,** Regel, Gartenflora, vii. p. 312; Jacobi, Vers. syst. Ord. Agav. pp. 134 et 311; Baker in Gard. Chron. n. s. viii. p. 717.
MEXICO. Hort. Kew.

97. **Agave salmdyckii,** Baker in Gard. Chron. n. s. viii. p. 490.
Agave keratto, Salm-D. in Bonplandia, 1859, p. 93; Jacobi, Vers. syst. Ord. Agav. pp. 127 et 249, non Mill.
MEXICO. Hort. Kew.

98. **Agave salmiana,** Otto in Otto & Dietr. Allg. Gart. Zeit. 1842, p. 51 (nomen tantum); Salm-D. in Bonplandia, 1859, p. 88; Jacobi, Vers. syst. Ord. Agav. pp. 58 et 221; Rev. Hort. 1872, pp. 373–375, figg. 40 et 41; Gard. Chron. n. s. vii. p. 718, et viii. p. 176, fig. 33.

MEXICO. Hort. Kew.

99. **Agave sartorii,** K. Koch, Wochenschrift, 1860, p. 37; Jacobi, Vers. syst. Ord. Agav. p. 128; Baker in Gard. Chron. n. s. viii. p. 683; Bot. Mag. t. 6292.

Agave noackii, Jacobi, Vers. syst. Ord. Agav. p. 125.

Agave aloina, K. Koch, Wochenschrift, 1860, p. 37.

Agave pendula, Schnittspahn in Zeitschr. Gart. Verein Darmstadt, 1857; Jacobi, l. c. p. 130.

Agave cæspitosa, Todaro, Hort. Bot. Panorm. t. 8.

MEXICO; GUATEMALA. Hort. Kew.

100. **Agave saundersii,** Hook. f. Bot. Mag. t. 5493; Jacobi, Vers. syst. Ord. Agav. p. 223.

MEXICO. Hort. Kew.

101. **Agave (Littæa) schidigera,** Lemaire, Ill. Hort. viii. verso t. 289, et ix. t. 330; Jacobi, Vers. syst. Ord. Agav. pp. 36 et 200; Baker in Gard. Chron. n. s. vii. p. 303; Bot. Mag. t. 5641.

Agave filifera, var. *pannosa* et var. *adornata,* Schiedw. in Comptes Rendus Soc. Roy. Agric. et Bot. 1861, et Koch, Wochenschrift, 1861, p. 287.

MEXICO. Hort. Kew.

102. **Agave schlechtendalii,** Jacobi, Vers. syst. Ord. Agav. p. 54.

MEXICO.

103. **Agave (Littæa) schottii,** Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 17; Baker in Gard. Chron. n. s. vii. p. 303.

Agave geminiflora?, var. *sonoræ,* Torr. Bot. U. S. & Mex. Bound. Surv. p. 214.

NORTH MEXICO, Sonora (*Schott*).

104. **Agave (Euagave) scolymus,** Karw. in Hort. Dyck. p. 307; Jacobi, Vers. syst. Ord. Agav. pp. 83 et 231; Refug. Bot. t. 328; Baker in Gard. Chron. n. s. viii. p. 40.

Agave schnittspahnii, Jacobi, Vers. syst. Ord. Agav. p. 83.

Agave amœna, Lemaire ex Jacobi, l. c. p. 84.

Agave cucullata, Lemaire, l. c. p. 82.

MEXICO. Hort. Kew.

105. **Agave seemanniana,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 154 (reprint, p. 29); Baker in Gard. Chron. n. s. viii. p. 40.

GUATEMALA (*Seemann*). Hort. Kew.

106. **Agave serrulata,** Karw. ex Otto in Otto & Dietr. Allg. Gart. Zeit. 1842, p. 51 (nomen tantum); Salm-D. in Bonplandia, 1859, p. 91; Jacobi, Vers. syst. Ord. Agav. p. 142; Baker in Gard. Chron. n. s. viii. p. 780.

MEXICO.

107. **Agave (Manfreda) sessiliflora,** Hemsley, Diag. Pl. Nov. pars 3, p. 55. (Tab. LXXXVIII. B.)

Acaulis, foliis erectis usque fere bipedalibus obtusis evittatis crebre striatis margine obsolete denticulatis nec undulatis, scapo 2–3-pedali (forsan interdum ultra) apice 8–12-floro, perianthii lobis apice cucullatis et intus barbatis, quam tubus paullo brevioribus, staminibus longissime exsertis.

Herba acaulis, glaberrima. *Folia* erecta, nec rosulata, subcoriacea, 9 poll. usque fere 2 ped. longa, 6–10 lineas lata, obtusa, evittata, margine obsolete denticulata, nec undulata, longitudinaliter crebre striata. *Scapus* 2–3-pedalis (forsan interdum ultra) teres, circiter 8–12-florus. *Flores* conferti, sessiles, bracteati; bracteæ parvæ; perianthii lobi apice cucullati et intus barbati, tubo paullo breviores; stamina longissime exserta.

SOUTH MEXICO, region of Orizaba (*Bourgeau*, 3003), barranca of Pedregal on rocks by the river (*Bourgeau*, 412). Hb. Kew.

108. **Agave smithiana,** Jacobi, Vers. syst. Ord. Agav. p. 250; Baker in Gard. Chron. n. s. viii. p. 682.

Agave lamprochlora et *A. perlucida,* Jacobi in Abhandl. Schles. Gesell. 1869, pp. 150 et 151?

NORTH MEXICO, San Luis Potosi. Hort. Kew.

109. **Agave splendens,** Jacobi in Abhandl. Schles. Gesell. 1870–71, p. 63; Baker in Gard. Chron. n. s. vii. p. 369.

MEXICO?

110. **Agave stenophylla,** Jacobi, Vers. syst. Ord. Agav. p. 257.

MEXICO?

111. **Agave (Littæa) striata,** Zucc. in Nov. Act. Acad. Nat. Cur. xvi. 2, p 678; Kunth, Enum. v. p. 832; Jacobi, Vers. syst. Ord. Agav. p. 154; Baker in Gard. Chron. n. s. viii. p. 556; Bot. Mag. t. 4590.

MEXICO, Real del Monte. Hort. Kew.

112. **Agave tehuacanensis,** Karw. ex Otto in Otto & Dietr. Allg. Gart. Zeit. 1842, p. 51 (nomen tantum); Salm-D. in Bonplandia, 1859, p. 89; Jacobi, Vers. syst. Ord. Agav. p. 60.

MEXICO. Hort. Kew.

113. **Agave theometel,** Zuccagni in Rœm. Collect. ex Rœm. Synop. Monogr., Amaryll. p. 288; Jacobi, Vers. syst. Ord. Agav. p. 70; Baker in Gard. Chron. n. s. viii. p. 200.

MEXICO.

114. **Agave thomsoniana,** Jacobi, Vers. syst. Ord. Agav. p. 249; Baker in Gard. Chron. n. s. viii. p. 717.

NORTH MEXICO, San Luis Potosi. Hort. Kew.

115. **Agave (Manfreda) undulata,** Klotzsch in Otto & Dietr. Allg. Gart. Zeit. 1840, p. 274; Kunth, Enum. v. p. 830; Jacobi, Vers. syst. Ord. Agav. p. 189, et in Abhandl. Schles. Gesell. 1870–71, p. 89; Baker in Gard. Chron. n. s. viii. p. 808.

MEXICO.

116. **Agave (Littæa) univittata,** Haworth in Phil. Mag. x. p. 414; Kunth, Enum. v. p. 835; Jacobi, Vers. syst. Ord. Agav. pp. 41 et 205; Refug. Bot. t. 215; Baker in Gard. Chron. n. s. vii. p. 368, fig. 58.

MEXICO. Hort. Kew.

117. **Agave vanderwinneni,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 144 (reprint, p. 19); Baker in Gard. Chron. n. s. vii. p. 620.

MEXICO?

118. **Agave (Manfreda) variegata,** Jacobi, Vers. syst. Ord. Agav. p. 180; Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 15; Proc. Am. Acad. Sc. xviii. p. 161; Baker in Gard. Chron. n. s. viii. p. 808; Refug. Bot. t. 326.

NORTH MEXICO, near Matamoros (*Gregg*), San Miguelito Mountains (*Schaffner*).

119. **Agave (Euagave) verschaffeltii,** Lemaire, Ill. Hort. t. 564; Jacobi, Vers. syst. Ord. Agav. pp. 86 et 234; Refug. Bot. t. 306.

MEXICO. Hort. K

120. **Agave victoriæ-reginæ,** T. Moore in Gard. Chron. n. s. (Oct. 1875) iv. p. 485, cum ic. xylogr.; Flore des Serres, xxi. p. 169, cum ic. xylogr.; Baker in Gard. Chron. n. s. vii. p. 528; Proc. Am. Acad. xviii. p. 163.

Agave consideranti, Carrière in Rev. Hort., Nov. 1875, p. 429, fig. 68.

NORTH MEXICO, Monterey, Nuevo Leon (*Palmer*). Hb. Kew., Hort. Kew.

121. **Agave viridissima,** Baker in Gard. Chron. n. s. viii. p. 137.

MEXICO?

122. **Agave (Euagave) vivipara,** Linn. Sp. Pl. ed. 2, p. 461; Baker in Gard. Chron. n. s. viii. p. 780; Wight, Ic. Pl. Ind. Or. t. 2024, non Salm-D.

Agave cantula, Galeotti ex Jacobi, in Abhandl. Schles. Gesell. 1869, p. 160.

MEXICO.

This species is now widely spread in many parts of the Old World.

123. **Agave warelliana,** Baker in Gard. Chron. n. s. viii. p. 264.

MEXICO?

124. **Agave (Euagave) wislizeni,** Engelm. in Trans. Acad. Sc. St. Louis, iii., reprint, p. 32; Baker in Gard. Chron. n. s. viii. p. 40.
Agave scabra, Salm-D. in Bonplandia, 1859, p. 89; Jacobi, Vers. syst. Ord. Agav. p. 88.
North Mexico, on the Nazas River, near San Sebastiano, South-east Chihuahua (*Wislizenus*). Hort. Kew.

125. **Agave (Littæa) xylonacantha,** Salm-D. in Bonplandia, 1859, p. 92; Jacobi, Vers. syst. Ord. Agav. pp. 45 et 209, et in Abhandl. Schles. Gesell. 1869, p. 141 (*xylacantha*); Baker in Gard. Chron. n. s. vii. p. 527, fig. 81; Bot. Mag. t. 5660.
South Mexico, Real del Monte. Hort. Kew.

126. **Agave (Littæa) yuccæfolia,** DC. in Red. Lil. tt. 328 et 329; Kunth, Enum. v. p. 830; Jacobi, Vers. syst. Ord. Agav. p. 146; Baker in Gard. Chron. n. s. viii. p. 781; Bot. Mag. t. 5213.
Agave cohniana, Jacobi, l. c. p. 264.
South Mexico, Real del Monte. Hort. Kew.

14. FURCRŒA.

Furcræa, Vent. in Bull. Soc. Philom. Par. i. p. 65; Benth. et Hook. Gen. Plant. iii. p. 739.
Fourcroya, Schult. Syst. vii. p. 730.

This genus is restricted to the warmer parts of America. About fifteen species have been enumerated; but several of them are imperfectly known, and probably some should rank as varieties.

1. **Furcræa bedinghausii,** K. Koch, Wochenschrift, 1863, p. 233; Jacobi, Vers. syst. Ord. Agav. p. 290; Morr. Belg. Hort. xiii. p. 327, cum icone; Baker in Gard. Chron. n. s. xi. p. 656.
Mexico (*Roezl*).

2. **Furcræa desmouliniana,** Jacobi, Vers. syst. Ord. Agav. p. 297; Baker in Gard. Chron. n. s. xi. p. 656.
Mexico (*Galeotti*).

3. **Furcræa elegans,** Todaro, Hort. Panorm. p. 13, t. 4; Baker in Gard. Chron. n. s. xi. p. 624.
Mexico?

4. **Furcræa flavo-viridis,** Hook. Bot. Mag. t. 5163; Jacobi, Vers. syst. Ord. Agav. p. 280; Baker in Gard. Chron. n. s. xi. p. 624.
South Mexico, Real del Monte (*Repper*). Hort. Kew.

5. **Furcræa gigantea,** Vent. in Uster. Ann. der Bot. xix. p. 54; DC. Plantes Grasses, t. 126; Bot. Mag. t. 2250; Gartenflora, t. 3; Kunth, Enum. v. p. 841; Jacobi, Vers. syst. Ord. Agav. p. 268; Baker in Gard. Chron. n. s. xi. p. 623.

Agave fœtida, Linn. Sp. Pl. ed. 2, p. 461; Jacq. Ic. Pl. Rar. t. 379.
Furcræa fœtida, Haworth, Synop. Pl. Succ. p. 73.
Funium pitiferum, Willemet, Herb. Maurit. p. 26.
Furcræa viridis, Jacobi et Gœpp. in Jacobi's Vers. syst. Ord. Agav. p. 273.

MEXICO?—Now widely spread in Tropical America, as well as in some parts of the Old World, where it is cultivated for the fibre afforded by its leaves. Willemet's specific name *pitiferum* has been altered by some authors into *filiferum*; but it is clear that he intended the former, as the fibre was called *pitt* or *pitte* in Mauritius. Hort. Kew.

6. **Furcræa longæva,** Karw. et Zucc. in Nov. Act. Nat. Cur. xvi. p. 666, t. 48; Kunth, Enum. v. p. 839; Jacobi, Vers. syst. Ord. Agav. p. 265; Baker in Gard. Chron. n. s. xi. p. 656; Bot. Mag. t. 5519.

SOUTH MEXICO, Tanga, Oaxaca, at an elevation of 10,000 feet (*Karwinski*); GUATEMALA, high mountains (*Skinner*). Hort. Kew.

7. **Furcræa selloa,** K. Koch, Wochenschrift, 1860, p. 22; Jacobi, Vers. syst. Ord. Agav. p. 289; Baker in Gard. Chron. n. s. xi. p. 624; Bot. Mag. t. 6148.

GUATEMALA, Quezaltenango (*Warscewicz*). Hort. Kew.

8. **Furcræa undulata,** Jacobi in Abhandl. Schles. Gesell. 1869, p. 170; Baker in Gard. Chron. n. s. xi. p. 656; Bot. Mag. 6160.

SOUTH MEXICO, Chiapas (*Ghiesbreght*). Hort. Kew.

Some of the other species of *Furcræa* described from cultivated plants of uncertain origin may be Mexican.

[The TACCACEÆ are a small Order of two genera and about ten species, whereof three are endemic in the northern part of South America, and the rest are natives of the Old World, two or three of them having a wide range of distribution.]

Order CXLVI. DIOSCOREACEÆ.

Dioscoreaceæ, Benth. et Hook. Gen. Plant. iii. p. 741.

Eight genera, comprising upwards of 160 species, are referred to this Order. One genus (*Rajania*), of which about six species are known, is peculiar to the West Indies; and all the other genera, excepting the widely spread *Dioscorea*, are monotypic or ditypic, and restricted to the Old World.

1. DIOSCOREA.

Dioscorea, Linn. Gen. Plant. n. 1122; Benth. et Hook. Gen. Plant. iii. p. 742.

Of this genus about 150 species have been described; but many of them are imperfectly known. They are generally dispersed in tropical countries, and a few extend to temperate regions—more to the southern than to the northern. There is one outlier of the genus in the Pyrenees.

The genus is in great want of revision. Some two or three years ago we compared and described all the species in Kew herbarium from within our limits, in the expectation of seeing the types of several species only known to us from the descriptions before publishing this part; but we have not been able to see them, and are obliged to publish our enumeration in its imperfect form. It is probable that some of our assumed new species are not new, although we have been unable to determine them from the published descriptions. The four plates, together with our descriptions, may be useful to any one undertaking a monograph of the whole genus. Following the enumeration of the species is a rough key to the species which have come under our observation.

1. **Dioscorea brachycarpa,** Schl. in Linnæa, xvii. p. 109.

Helmia brachycarpa, Kunth, Enum. v. p. 416.

South Mexico, near Regla (*Ehrenberg*).

2. **Dioscorea capillaris,** Hemsley, n. sp.

Gracillima, foliis ovato-cordatis oblongo-cordatisve acuminatis 7-nerviis subtus puberulis, floribus masculinis parvis laxe racemoso-paniculatis, pedicellis brevissimis, staminibus 3 filamentis deorsum dilatatis, floribus femineis fructibusque ignotis.

Herba perennis, tuberosa, volubilis, caulibus filiformibus. *Folia* alterna, petiolata, membranacea, 7-nervia, nervis extimis 1–2-furcatis, ovato-cordata vel oblongo-cordata, longe acuminata, acuta, 2½–5 poll. longa, præcipue subtus albido-puberula vel fere glabra. *Flores masculini* glabri, virides (ex *Galeottio*) luridi (ex *Lindenio*) 1½–2 lineas diametro, laxe racemoso-paniculati (racemis interdum simplicibus), panicularum ramuli elongati, fere filiformes, sparse puberuli; pedicelli floribus breviores; bracteæ pedicellis subæquales; perianthii segmenta oblonga, obtusa, patentia; stamina 3 divaricata, filamentis deorsum dilatatis.—*Dioscorea macrostachya,* Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 20), nec Benth.

South Mexico, Cordillera of Oaxaca at 6500 to 7000 feet (*Galeotti,* 5456), Mirador (*Linden,* 234), Orizaba (*Botteri,* 567, 571). Hb. Kew.

Var. **glabra,** novellis omnino glaberrimis.

Nicaragua, Chontales (*Tate,* 117). Hb. Kew.

A poor specimen, differing from the Mexican plant in being quite glabrous.

3. **Dioscorea cayennensis,** Lam. Encycl. iii. p. 323; Kunth, Enum. v. p. 380; Griseb. in Bonplandia, 1858, p. 11.

Panama (*Duchassaing*).—West Indies; Guiana; Brazil.

4. **Dioscorea composita,** Hemsley, n. sp.

Glabra robusta, foliis amplis orbiculari-cordatis 9–11-nerviis, floribus femineis spicato-paniculatis, paniculis pedalibus, capsula oblonga.

Herba vel *frutex* per petiolos scandens, glaber, caulibus crassiusculis leviter angulatis. *Folia* alterna, longe petiolata, subcoriacea, 9–11-nervia, orbiculari-cordata, sinu lato lamina usque ad 7 poll. longa et 6 poll. lata, acuminata; petiolus crassiusculus, 2–2½ poll. longus, basi apiceque incrassatus. *Flores feminei* spicato-paniculati; paniculæ pedales, præsertim a basi ramosæ; perianthium persistens (post anthesin) crassum, subcarnosum; segmenta late ovata; staminodia minuta; styli supra medium connati; stigmata bifida. *Capsula* oblonga, 1–1¼ poll. longa,

pergamentacea; semina oblonga, undique alata, alterum supra alterum infra medium loculi affixum.

South Mexico, Orizaba (*Botteri*, 1184). Hb. Kew.

The compound female inflorescence of this species distinguishes it from all others we have seen from Mexico and Central America; and we have not been able to match it with male specimens. There is a small scrap in Kew herbarium (Orizaba, *Bourgeau*, 3043) which may possibly be the same.

5. **Dioscorea convolvulacea,** Ch. et Schl. (Descript. amplif.) (Tab. LXXXIX.)

Foliis 9–11-nerviis subtus præcipue in nervis venisque albido-pilosulis, floribus glabris masculinis racemosis, quam folia brevioribus, perianthii 6-partita segmentis oblongis, staminibus 3, quam perianthium parum brevioribus, filamento crassis basi valde dilatatis.

Herba (ex Schlechtendalio) volubilis, caulibus hirtellis striatis. *Folia* alterna, longe petiolata, vix membranacea, 9–11-nervia, nervo utroque extimo 1–2-furcato, vere cordiformia, 3–5-pollicaria, sæpissime obtusiuscule acuminata, supra glabra, subtus præcipue in nervis venisque albido-pilosula. *Flores masculini* ad 3 lineas diametro, laxiuscule racemosi, glabri; racemi simplices vel furcati, rhachi hirtella; pedicelli glabri, solitarii, perianthio vix longiores; bracteæ pedicellis 3-plo breviores; perianthii segmenta oblonga, patentia; stamina 3; filamenta crassa, perianthio parum breviora, basi valde dilatata. *Flores feminei* glabri, subsessiles; spicæ pedunculatæ, foliis breviores; bracteæ parvæ; perianthii lobi oblongi, obtusi, patenti; styli lobis perianthinis paullo breviores divaricati. *Capsula* pergamentacea, oblonga, 9–12 lineas longa, 5–6 lineas lata, brevissime pedicellata; semina basi alata, supra medium loculorum affixa.—*Ch. et Schl. in Linnæa,* vi. p. 49; *Helmia convolvulacea,* Kunth, Enumer. Pl. v. p. 415?

South Mexico, Santa Fé &c., valley of Mexico (*Bourgeau*, 646, 1024; *Schaffner*, 494). Hb. Kew.

We have seen no authentic specimens of this species, and our plant does not agree in all respects with Kunth's definition, though it does agree very well with Schlechtendal's, as far as it goes. It is a very distinct species.

EXPLANATION OF TAB. XCII.

Portions of the male and female plant, in flower, of *Dioscorea convolvulacea,* with a cluster of ripe fruit: natural size. Fig. 1, a male flower; 2, a stamen; 3, a female flower: all enlarged; 4, a seed-vessel; 5, a seed: very slightly enlarged.

6. **Dioscorea cuspidata,** Humb. ex. Presl, Reliq. Hænk. i. p. 133.

Mexico?

An altogether doubtful plant.

7. **Dioscorea cymosula,** Hemsley, n. sp. (Tab. XC.)

Canescens, foliis amplis orbiculari-cordatis 11-nerviis, floribus masculinis racemoso-cymulosis, racemis elongatis basi tantum ramosis, staminibus 6 subæqualibus filamentis perianthio basi adnatis, floribus femineis racemosis solitariis.

Herba vel *frutex* volubilis, caulibus puberulis. *Folia* alterna, longe petiolata, membranacea, 11-nervia, nervis extimis 1–2-furcatis, orbiculari-cordata, acuminata, acuta, lamina 5 poll. diametro, præcipue subtus albido-pubescens; petiolus ad 3-pollicaris. *Flores masculini* albido-pubescentes, 2–2½ lineas diametro, racemoso-cymulosi, subsessiles; cymulæ breves, 2–6-floræ (floribus versus

apicem racemi solitariis); racemi usque ad pedales; bracteæ angustæ flores superantes; perianthii segmenta fere libera lanceolato-oblonga, obtusiuscula; stamina 6 subæqualia, filamentis perianthio basi adnatis. *Flores feminei* albido-pubescentes, racemosi, solitarii, subsessiles, basi bibracteati, bracteis linearibus acutis; perianthii segmenta ovato-oblonga, subacuta; stamina abortiva 6; ovarium oblongum, pubescens; stigmata bifida. *Fructus* deest.

PANAMA, Loseria (*S. Hayes*, 726).—BAHIA. Ab. Kew.

Gardner's 6094 from Maranha, Brazil, is very closely allied, and possibly the same species.

EXPLANATION OF TAB. XC.

A branch bearing male flowers, collected by Hayes, and a branch bearing female flowers, collected by Salzmann: both natural size. Fig. 1, an unopened male flower; 2, a male flower fully expanded; 3, an unopened female flower; 4, a female flower fully expanded: all enlarged.

8. **Dioscorea densiflora,** Hemsley, n. sp.

Præter racemos minute puberulos glaberrima, foliis 7-nerviis nitidis, floribus masculinis longe denseque racemosis, pedicellis solitariis quam perianthium brevioribus, perianthio alte 6-partito, staminibus fertilibus 3 brevibus, capsula pollicari utrinque rotundata.

Frutex volubilis, fere omnino glaberrimus, caulibus graciliusculis teretibus striatis vel leviter sulcatis. *Folia* alterna, longiuscule petiolata, membranacea, 7-nervia, nervo utroque extimo alte bipartito, vere cordiformia, 3–6 poll. longa, usque ad 3 poll. lata, longe acuminata, acuta, nitida; petiolus gracilis, circiter sesquipollicaris, supra canaliculatus. *Flores masculini* 2 lineas longi, dense racemosi; racemi minime puberuli, graciles, usque ad 9 poll. longi, simplices vel a basi 1–2-furcati; pedicelli solitarii 1–1½ lineas longi; bracteæ anguste lineares, flores excedentes; perianthium alte 6-partitum; segmenta æqualia, lanceolato-oblonga, obtusa, uninervia; stamina fertilia 3, perianthio 4-plo 5-plove breviora, cum 3 imperfectis alternantia. *Flores feminei* simpliciter racemosi, perianthio ut in masculinis; racemi densiusculi. *Capsula* pallida, pollicaris, circiter 9 lineas lata, utrinque rotundata, alis marginatis; semina oblonga, 4–5 lineas longa, undique sed irregulariter alata.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1487, 1681). Hb. Kew.

9. **Dioscorea floribunda,** Mart. et Gal. (Descript. amplif.)

Glaberrima, foliis 9-nerviis ovato-cordatis longissime acuminatis, floribus masculinis racemoso-paniculatis, paniculis gracilibus amplis multifloris, perianthio subcylindraceo, staminibus 6 perfectis quorum 3 brevioribus.

Herba perennis (*Galeotti*), scandens vel volubilis, prorsus glaberrima, caulibus teretibus graciliusculis. *Folia* alterna, longe petiolata, subcoriacea, cordato-ovata, 5–6-pollicaria, longissime acuminata, acuta, 9-nervia, nervis extimis 2-furcatis, prominenter reticulato-venosa, supra interdum maculato-marmorata; petiolus gracilis, semiteres, usque bipollicaris. *Flores masculini* virides, brunnei (*Galeotti*), 1–1½ lineas longi, subsessiles, racemoso-paniculati; paniculæ amplæ, usque ad pedales (*Galeotti*), ramulis gracillimis; bracteæ minutæ; perianthii subcylindracei lobi erecti, oblongi, obtusi, tubum æquilongi; stamina 6, omnia perfecta 3 breviora, longiora perianthio paullo breviora. *Flores feminei* . . . . . .—*Mart. et Gal. in Bull. Acad. Brux.* ix. 2 (reprint, p. 20).

SOUTH MEXICO, Jalapa at 3000 feet (*Galeotti*, 5460). Hb. Kew.

10. **Dioscorea galeottiana,** Kunth. (Descript. amplif.)

Pilosula, foliis 13–15-nerviis orbiculari-cordatis, floribus masculinis racemoso-paniculatis, perianthio fere 6-phyllo, segmentis angustis patentissimis, staminibus 3 liberis.

Herba perennis, volubilis, caulibus crassiusculis primum sparse pilosulis deinde glabris. *Folia* alterna, longe petiolata, membranacea, 13–15-nervia, orbiculari-cordata (interdum obscure trilobata), 4–9 poll. longa, acuminata, sparse puberula vel pilosula. *Flores masculini* brunnei, glabri, 4–5 lineas diametro, racemoso-paniculati; paniculæ plus minusve pilosulæ, ad semipedales, multifloræ; ramuli graciles; pedicelli filiformes, 3–4 lineas longi; bracteæ parvæ; perianthium fere a basi 6-phyllum; segmenta lanceolato-oblonga, obtusiuscula, patentissima; stamina 3, libera, perianthio paullo breviora, patentia; filamentis deorsum vix dilatatis; staminodia nulla.—*Kunth, Enum. Pl.* v. p. 409; *D. grandiflora,* Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 21), non Mart.

South Mexico, mountains near Oaxaca at 7000 feet (*Galeotti*, 5457), Guadalupe, near Mexico (*Bourgeau*, 739). Hb. Kew.

11. **Dioscorea grandifolia,** Schl. (Descript. mutat.)

Foliis 11–13-nerviis maximis, in ramulis floriferis usque ad sesquipedalibus subtus in rete vasculoso albo pilosulis, floribus masculinis laxe racemosis, perianthio fere 6-phyllo, staminibus 3, filamentis crassis.

Herba vel *frutex* volubilis, caulibus glabris, angulatis. *Folia* alterna, longe petiolata, membranacea, 11–13-nervia, nervis extimis furcatis, cordiformia, longe acuminata, acutissima, 16–18 poll. longa, $2\frac{1}{2}$–9 poll. lata, supra glabra, subtus præsertim in nervis venisque albo-pilosula; petiolus gracilis. *Flores masculini* glabri, 2–$2\frac{1}{2}$ lineas diametro, racemosi; racemi laxiusculi, graciles, simplices, vel basi furcati, ad semipedales; pedicelli filiformes, solitarii, 2–4 lineas longi; bracteæ parvæ; perianthium fere 6-phyllum; segmenta lineari-oblonga, obtusa, patentissima; stamina 3; filamenta libera, crassa, segmentis breviora, divaricata. (Flores feminei ignoti.)

South Mexico, in woods between Acatlan and Chiconquiaco (*Schiede*). Hb. Kew.

Independently of its large leaves, this species is very distinct from the other Mexican and Central-American ones in its male flowers. We have been unable to match the original male specimens with fema es.

12. **Dioscorea hirsuta,** Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 20); Kunth, Enum. v. p. 408.

South Mexico, Mirador 3000 to 3500 feet (*Galeotti*, 5458).

Said to be very near *D. floribunda*.

13. **Dioscorea leiboldiana,** Kunth, Enum. Pl. v. p. 355.

South Mexico (*Leibold*).

14. **Dioscorea macrostachya,** Benth. (Descript. reform.)

Glaberrima, foliis 7–9-nerviis, ovato- usque ad orbiculari-cordatis, floribus masculinis in spiculas 2–5-floras racemosis, perianthii segmentis orbicularibus, staminibus 6, antheris subsessilibus, floribus femineis racemosis, capsula immatura obovato-oblonga.

Herba vel *frutex* volubilis vel per petiolos scandens, omnino glaberrimus, caulibus breviter sulcatis. *Folia* alterna, longe petiolata, membranacea, 7–9-nervia, ovato-cordata ad orbiculari-cordata, caudato-acuminata, lamina $2\frac{1}{2}$–5 poll. longa lataque; petiolus gracilis, $1\frac{1}{2}$–$2\frac{1}{2}$-pollicaris. *Flores masculini* virides (ex *Galeottio*), purpurei (ex *Hayesio*), circiter lineam diametro, in spiculas vel glomerulas, 2–5-floras, breviter pedunculatas aggregati (rarissime pedunculis 1-floris); spiculæ densiuscule racemosæ; racemi solitarii, 3–5-pollicares, rhachi angulata; bracteæ

pedunculos sæpe æquilongæ; bracteolæ parvæ; perianthii segmenta orbicularia, patentia; stamina 6, antheris subsessilibus. *Flores feminei* racemosi; racemi 4–7-pollicares; perianthii persistentis segmenta ovato-orbicularia; styli ad medium connati, supra medium recurvi, stigmatibus bifidis. *Capsula* (immaturæ tantum visæ) obovato-oblonga, breviter pedicellata, 1–1¼ poll. longa.—*Benth. Pl. Hartweg.* p. 73 (1841); *D. macrophylla,* Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 21) (1842); *D. macrophylla,* Schl. in Bot. Zeit. 1843, p. 889; *D. deppei,* Schiede, ex Schl. l. c.; *D. billbergiana,* Kunth, Enum. Pl. v. p. 354 (1850); Seem. Bot. Voy. 'Herald,' p. 216.

South Mexico, Panistlahuaca and Tepinistlahuaca (*Hartweg*, 518), near Jalapa 3000 feet (*Galeotti*, 5461), Hacienda de la Laguna (*Linden*, 46), Vera Cruz to Orizaba (*Müller*, 1391), region of Orizaba (*Bourgeau*, 2419); Central America (*Barclay*)?; Panama, Chagres (*Fendler*, 335, 336), around the city of Panama (*S. Hayes*, 727). Hb. Kew.

Seemann records it from Colombia, Guiana, and Brazil; but the specimens appear to belong to a different species. A specimen collected by Seemann (n. 1204) in Veraguas, without leaves, has male flowers of exactly the same structure; but the racemes are in clusters instead of solitary.

15. **Dioscorea multinervis,** Benth. (Descript. amplif.)

Nana glabra, foliis brevissime petiolatis orbiculari-cordatis multinerviis, floribus masculinis subsessilibus in spicas glomeratis, staminibus 3, floribus femineis in racemis brevibus, stylis alte connatis, capsula immatura tuberculata vel echinulata.

Herba perennis, tuberosa, glabra, caulibus 2–6-pollicaribus, 1–plurifoliatis. *Folia* alterna, brevissime petiolata, submembranacea, 9–13-nervia, orbiculari-cordata, 1–3 poll. diametro, apice sæpissime brevissime acuminata. *Flores masculini* subsessiles in spicas glomerati, 1–1½ lineas diametro; spicæ densiusculæ simplices solitariæ, binæ vel ternæ, 1–2½ poll. longæ; bracteæ minutæ; perianthii segmenta lata, apice rotundata; stamina 3, perianthio breviora. *Flores feminei* racemosi; racemi pauciflori (interdum uniflori ex *Schlechtendalio*) sæpe infra semipollicari; perianthium supra ovarium tuberculatum constrictum; segmenta elliptica; styli connati. ("Fructus subglobosus, obtuse trigonus ad angulos verrucosus, 3-locularis, loculis 2-spermis; semina globosa, ex Schlechtendalio.")—*D. nana,* Schl. in Linnæa, xviii. p. 112; *D. schlechtendalii,* Kunth, Enum. Pl. v. p. 411.

South Mexico, Morelia (*Hartweg*, 393), Toluca (*Schiede*). Hb. Kew.

16. **Dioscorea pallens,** Schl. (Descript. amplif.) (Tab. XCII. B.)

Undique fere glaberrima, foliis 7-nerviis nitidis, floribus masculinis laxiuscule racemosis, racemis simplicibus solitariis vel pluribus insigniter angulatim flexuosis, pedicellis ad angulos rhachis sæpissime solitariis, perianthii segmentis lanceolatis obtusis, staminibus fertilibus 3.

Herba perennis (*Galeotti*), volubilis fere omnino glaberrima, caulibus graciliusculis. *Folia* alterna, longe petiolata, membranacea, 7-nervia, nervo utroque extimo 3-partito, vere cordiformia, 2–4-pollicaria, longe acuminata, acuta, nitida; petiolus gracilis, lamina paullo brevior. *Flores masculini* rubro-virides (*Galeotti*), 1½–2 lineas longi, laxiuscule racemosi; racemi minute puberuli, insigniter angulatim flexuosi, simplices, solitarii vel plures, 3–5-pollicares; pedicelli ad angulos rhachis sæpissime solitarii, perianthio æquilongi; bracteæ anguste lineares, pedicellis breviores; perianthium alte 6-partitum; segmenta æqualia, lanceolata, obtusa, uninervia, stellatim patentia; stamina fertilia 3, perianthio 4-plo breviora cum 3 imperfectis alternantia. *Flores feminei* . . . . .—*D. polygonoides,* Mart. et Gal. in Bull. Acad. Brux. ix. pars 2 (reprint, p. 22), nec H. B. K.

South Mexico, Jalapa 3000 feet (*Galeotti*, 5459), region of Orizaba (*Bourgeau*, 3109). Hb. Kew.

We at first described Bourgeau's specimens as a new species; but, in spite of little deviations from the description given by Schlechtendal, we think they must belong to *D. pallens*, because that is the only one apparently having the remarkably angular wavy racemes. The female is unknown to us, and undescribed by Schlechtendal.

EXPLANATION OF TAB. XCII.

B. A branch of the male plant of *Dioscorea pallens*, natural size. Fig. 3, a flower and portion of the rhachis; 4, a stamen; 5, a staminode: all enlarged.

17. **Dioscorea polygonoides,** Humb. et Bonpl. (Descript. amplif.)

Glaberrima, caulibus gracilibus, foliis tenuiter membranaceis, floribus masculinis minutis in spicas elongatas filiformes glomeratis, staminibus fertilibus 3, antherarum loculis distincte discretis, capsula suborbiculari, seminibus semicircularibus.

Herba vel *frutex* volubilis, omnino glaber, caulibus gracilibus teretibus striatulis. *Folia* alterna, longe petiolata, tenuiter membranacea, 7–9-nervia, nervis extimis furcatis, late ovato-cordatis, 2–5-pollicaria, caudato-acuminata; petiolus gracilis. *Flores masculini* minuti (sæpe vix lineam diametro) in spicas filiformes glomerati; spicæ simplices vel a basi tantum ramosæ, solitariæ vel pluræ, 3–9-pollicares, glomerulis sparsis; perianthium fere a basi 6-partitum; segmenta ovato-orbicularia; stamina fertilia 3, segmentis breviora, antheris distincte discretis, sterilia (staminodia) minuta vel interdum nulla (?). *Flores feminei* laxiuscule spicati; perianthii segmenta ovato-orbicularia; staminodia parva; stylo in columnam centralem perianthio breviorem connati, stigmatibus bifidis deflectis. *Capsula* pergamentacea, suborbicularis, circiter 13 lineas longa et 11 lineas lata; semina semicircularia undique alata, alterum infra alterum supra medium loculi affixum.—*Humb. et Bonpl. in Willd. Sp. Pl.* iv. p. 795; *Kunth, Enum. Pl.* v. p. 332?

Nicaragua, Isle of Omotepé (*Lévy*, 174); Panama, Empire railway-station (*S. Hayes*, 304).—Colombia, Guiana, Brazil. Hb. Kew.

18. **Dioscorea propinqua,** Hemsley, n. sp.

Glaberrima, foliis 7-nerviis gradatim acuminatis, spicis femineis simplicibus quam folia paullo longioribus, capsula subsessili oblongo-orbiculari subcoriacea, seminibus oblongis undique alatis.

Herba vel *frutex* volubilis, fructiferus omnino glaberrimus, caulibus gracilibus. *Folia* alterna, longiuscule petiolata, membranacea, 7-nervia, nervis extimis furcatis, ovato-cordata, 3–5-pollicaria, gradatim acuminata, acuta, subtus venis primariis distantibus prominulis. *Flores feminei* . . . . . *Capsulæ* in spicas confertas foliis paullo longiores dispositæ, subcoriaceæ, oblongo-orbiculares, circiter 12 lineas longæ et 9 latæ, alis marginatis; semina oblonga, undique (sed facie interiore angustissime) alata, alterum supra alterum infra medium loculi affixum.

South Mexico, valley of Cordova (*Bourgeau*, 1488). Hb. Kew.

At first we were disposed to regard this as the female of *D. sparviflora*, but the leaves are only 7-nerved and taper gradually upward into a sharp point.

[*Helmia racemosa*, Klotzsch in Otto & Dietr. Allg. Gart. Zeit. xix. p. 393, from Central America, is quite unknown to us.]

19. **Dioscorea remotiflora,** Kunth, Enum. v. p. 409.

Dioscorea laxiflora, Schl. in Linnæa, xvii. p. 606.
Helmia ehrenbergia, Kunth, Enum. v. p. 433, ex Griseb. Fl. Brit. W. Ind. p. 588.

SOUTH MEXICO, Atotonilco el Grande (*Schiede*).

20. **Dioscorea sapindoides,** Presl. (Descript. amplif.) (Tab. XCI.)

Foliis glabris cordato-oblongis, floribus omnibus villosulis masculinis fasciculatim racemosis, pedicellis quam flores longioribus, staminibus 6 centralibus, filamentis ad medium connatis, femineis laxiuscule spicatis, stylis connatis.

Herba vel *frutex* volubilis, caulibus glabris gracilibus teretibus. *Folia* glabra, alterna, petiolata, membranacea, glabra, ad apicem 3-nervia, nervis extimis brevibus 2-furcatis, cordato-oblonga, 2–4-pollicaria, anguste acuminata vel fere cuspidata; petiolus gracillimus, ad pollicaris. *Flores masculini* villosuli, 1–1½ lineas diametro, fasciculatim racemosi; racemi simplices, solitarii vel plures, 3–9-pollicares; bracteæ parvæ; pedicelli graciles, floribus subduplo longiores; perianthii 6-partiti segmenta oblonga; stamina 6 centralia, filamentis ad medium connatis supra medium recurvis. *Flores feminei* villosuli, laxiuscule spicati; spicæ 3–4-pollicares (subpedales, ex *Preslio*); perianthii lobi oblongi; styli connati. ("*Capsula* 6 lineas longa, 4 lineas lata, sessilis, subelliptica, glabra vel præsertim apice pilis raris flexuosis aspersa."—*Presl, Reliq. Hænk.* i. p. 133.

MEXICO (ex *Presl*); PANAMA, near the city of Panama (*Seemann*, 287), Empire railway-station (*S. Hayes*, 303, 321). Hb. Kew.

EXPLANATION OF TAB. XCI.

Flower-bearing branches of the male and female of *Dioscorea sapindoides*, natural size. Fig. 1, a cluster of male flowers; 2, a male flower, fully expanded; 3, central androecium of the same; 4, young female flowers; 5, one of the same, further enlarged; 6, a fully expanded female flower; 7, styles and rudimentary stamens of the same: all enlarged.

21. **Dioscorea sparsiflora,** Hemsley, n. sp.

Glabra vel cito glabrescens, foliis 9-nerviis vere cordiformibus apiculatis, floribus masculinis in glomerulos 5–1-floros subspicatis, glomerulis distantibus perianthio fere campanulato, lobis reflexis, staminibus 6, filamentis perianthio ad medium adnatis, floribus femineis fructibusque ignotis.

Herba vel *frutex* volubilis, primum minutissime sparsissime puberulus, cito glaberrimus, caulibus graciliusculis subteretibus vel leviter angulatis. *Folia* alterna, longiuscule petiolata, membranacea, 9-nervia, nervis extimis furcatis, vere cordiformia, 3–5-pollicaria, apiculata vel abrupte et brevissime acuminata, nervis venisque primariis subtus prominulis; petiolus gracilis canaliculatus. *Flores masculini* glabri, ½–⅓ lineæ diametro, vix lineam longi, subsessiles vel brevissime pedicellati, in racemos vel pseudospicas elongatas laxissimas 2–5 aggregati, vel interdum solitarii; pseudospicæ graciles, longiuscule pedunculatæ, solitariæ vel 2–3 aggregatæ, 3–9 poll. longæ; perianthium urceolato-campanulatum ad medium 6-lobatum, lobis recurvis; stamina fertilia 6, æqualia, perianthii tubum paullo excedentia, filamentis perianthio ad medium adnatis; ovarii rudimentum maximum.

SOUTH MEXICO, Plateau of Mexico (*Ghiesbreght*). Hb. Kew.

In many respects this answers to Schlechtendal's description of *D. laxiflora* (*D. remotiflora*, Kunth); but there is scarcely a trace of the minutest hairs upon it in quite a young state, and the leaves and perianth and stamens seem to differ, and the

racemes are very much longer than the leaves. It may, however, prove to be a glabrous condition of the same species.

22. **Dioscorea spiculiflora,** Hemsley, n. sp. (Tab. XCII. A.)

Glaberrima, caulibus gracillimis, foliis subhastato-cordatis, floribus masculinis spiculatis, spiculis densifloris in racemos elongatos dispositis, perianthio fere a basi 6-partito, staminibus fertilibus 6, antheris subsessilibus.

Herba vel *frutex* volubilis, prorsus glaberrimus, caulibus gracillimis teretibus. *Folia* alterna, longe petiolata, membranacea, 7-nervia, nervo utroque extimo furcato, subhastato-cordata, 2–4-pollicaria, acuminata, basi interdum fere truncata, opaca; petiolus gracilis, lamina paullo brevior. *Flores masculini* vix lineam diametro, spiculati; spiculæ subsessiles, 2–3 lineas longæ, 5–10-floræ, in racemos graciles laxiusculos dispositæ; racemi solitarii vel plures, simplices vel basi 1–2-furcati, usque ad 9 poll. longi; perianthium fere a basi 6-partitum; segmenta crassa ovato-orbicularia; stamina fertilia 6, antheræ subsessiles. *Flores feminei* . . . . .

South Mexico, Yucatan (*Linden*, 236). Hb. Kew.

The male inflorescence of this species resembles that of some of the Old-World species, having opposite lobed leaves.

EXPLANATION OF TAB. XCII. A.

A flower-bearing branch of the male of *Dioscorea spiculiflora,* natural size. Fig. 1, a spikelet of male flowers; 2, a single male flower: both enlarged.

23. **Dioscorea tenuiflora,** Schl. in Linnæa, xvii. p. 608; Kunth, Enum. v p. 411.

South Mexico.

24. **Dioscorea urophylla,** Hemsley, n. sp.

Glaberrima, foliis orbicularibus vel cordato-orbicularibus longe caudato-acuminatis, floribus masculinis spicatis, spicis a basi ramosis, perianthii segmentis oblongis, staminibus 6 subæqualibus.

Herba vel *frutex* scandens vel volubilis, omnino glaberrimus. *Folia* alterna, longe petiolata, submembranacea, 7-nervia, nervis extimis alte furcatis, orbicularia vel cordato-orbicularia, longe caudato-acuminata, 3–6-pollicaria, lineolis pellucidis conspicuis conspersa, simul brunneo-punctulata; petiolus gracilis. *Flores masculini* $1\frac{1}{2}$–2 lineas diametro, spicati; spicæ densiusculæ, alternifloræ, a basi ramosæ vel interdum simplices, 4–6-pollicares, graciles; bracteæ parvæ, late ovatæ, acuminatæ; perianthii 6-partiti segmenta oblonga, obtusa, supra medium recurva; stamina 6, subæqualia, perianthio paullo breviora; filamenta perianthio basi adnata; ovarii rudimentum sat magnum. (Flores feminei ignoti.)

Panama (*S. Hayes*, 190). Hb. Kew.

The Mexican and Central-American species of *Dioscorea,* as far as we have been able to examine them, present the following modifications in the androecium:—

I. Stamina sex in columnam connata, omnia perfecta.
D. sapindoides.

II. Stamina sex libera vel perianthio adnata, omnia perfecta; antheræ filamentis multo breviores.
D. sparsiflora, D. floribunda, D. urophylla et *D. cymosula.*

III. Stamina sex, omnia perfecta; antheræ subsessiles.
D. spiculiflora et *D. macrostachya.*

IV. Stamina sex quorum tria sterilia.
D. polygonoides, *D. densiflora* et *D. pallens.*

V. Stamina tria.
D. grandifolia, *D. convolvulacea*, *D. galeottiana*, *D. capillaris* et *D. multinervis.*

VI. Stamina ignota.
D. propinqua et *D. composita.*

Series III. CORONARIEÆ.

[ROXBURGHIACEÆ, an Order of three genera and eight species, inhabiting Asia and Australia, and one, *Croomia pauciflora*, Florida, Georgia, and Alabama; the only other known species of the genus being a native of Japan.]

Order CXLVII. LILIACEÆ.

Liliaceæ, Benth. et Hook. Gen. Plant. iii. p. 748.

As limited by Bentham and Hooker this Order comprises 187 genera (to which have to be added two Mexican genera founded by S. Watson since the completion of the 'Genera Plantarum'), dispersed under twenty tribes. Upwards of 2100 species are known, and they are generally dispersed, except in the colder regions, though most numerous in temperate and subtropical countries.

Tribe I. SMILACEÆ.

Smilaceæ, Benth. et Hook. Gen. Plant. iii. p. 751.

Besides *Smilax* there are two genera of five species each, one of them being restricted to Australia and New Zealand, and the other to Eastern Asia.

1. SMILAX.

Smilax, Linn. Gen. Plant. n. 1120; Benth. et Hook. Gen. Plant. iii. p. 763; DC. Monogr. Phanerog. i. pp. 1–213.

Nearly 200 species are enumerated by De Candolle, and they are spread over nearly all temperate and tropical regions, both in America and the Old World.

1. **Smilax acutifolia,** Schl. in Linnæa, xviii. p. 449; DC. Monogr. Phanerog. i. p. 85.
SOUTH MEXICO, near Anganguio (*Schiede*), near El Banco (*Ehrenberg*).

2. **Smilax angustiflora,** A. DC. in DC. Monogr. Phanerog. i. p. 67.
COSTA RICA, Alto de la Cruz, near Azari (*Hoffmann*).

3. **Smilax aristolochiæfolia,** Mill. Dict. n. 7; DC. Monogr. Phanerog. i. p. 208.
Smilax milleri, Steud. Nomencl. Bot.

South Mexico, near Vera Cruz (*Houston*).

["*S. berterii*, Spreng." (Mart. et Gal. in Bull. Acad. Brux. ix. 2, reprint, p. 19), De Candolle was unable to determine.]

4. **Smilax bona-nox,** Linn. Sp. Pl. ed. 1, p. 1030; A. DC. in DC. Monogr. Phanerog. i. p. 77 (subspecies et varietates plures).

Smilax tamnoides, A. Gr. Man. Bot. N. U. S. ed. 5, p. 519, non L.?

Smilax platycentron, Schl. in Linnæa, xviii. p. 452?

Eastern North America from New Jersey and Illinois southward to Mexico.

Subsp. **wrightii,** A. DC. l. c. p. 78.

Smilax medica?, Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 19), non Schl.

Louisiana; Texas.—Mexico, without locality (*Pavon*), near Jalapa 4000 to 5000 feet (*Galeotti*, 5479), Zimapan (*Coulter*. 1589). Hb. Kew.

Subsp. **polyodonta,** A. DC. l. c.

ε. **senticosa,** A. DC. l. c. p. 79.

South Mexico, Puente de Dios (*Ehrenberg*), without locality (*Schaffner*).

5. **Smilax botterii,** A. DC. in DC. Monogr. Phanerog. i. p. 89.

South Mexico, around Orizaba (*Botteri*, 467), valley of Mexico (*Bourgeau*, 237, 1131). Hb. Kew.

6. **Smilax candelariæ,** A. DC. in DC. Monogr. Phanerog. i. p. 70.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 563)?; Costa Rica, near Candelaria (*Hoffmann*).

7. **Smilax cognata,** Kunth, Enum. v. p. 175; DC. Monogr. Phanerog. i. p. 110.

Mexico, Puerto Alegro (ex *Kunth*).

We know of no such name as Puerto Alegro in Mexico, and the plant may, as De Candolle suggests, have come from South Brazil.

8. **Smilax cordifolia,** Humb. et Bonpl. ex Willd. Sp. Pl. iv. p. 778; Kunth, Enum. v. p. 236; DC. Monogr. Phanerog. i. p. 83.

South Mexico, near Jalapa and La Banderilla (*Humboldt & Bonpland; Galeotti*, 5479), near Mirador (*Linden*), Papantla (*Karwinski*).—Antigua. Hb. Kew.

β. **schiedeana,** A. DC. in DC. Monogr. Phanerog. i. p. 84; Kunth, Enum. v. p. 236 (species).

Smilax pseudochina, Ch. et Schl. in Linnæa, vi. p. 49, non L.

South Mexico, near Jalapa (*Schiede & Deppe*).

γ. **papantlæ,** A. DC. l. c.

Smilax sylvatica, Kunth, Enum. v. p. 234, pro parte.

South Mexico, near Papantla (*Schiede & Deppe*).

9. **Smilax densiflora,** A. DC. in DC. Monogr. Phanerog. i. p. 88.

South Mexico, Toluca (*Andrieux*, 69). Hb. Kew.

β. **christmarensis,** A. DC. l. c. p. 89.

South Mexico, hills around San Miguel (*Christmar*).

10. **Smilax discolor,** Schl. in Linnæa, xviii. p. 454; DC. Monogr. Phanerog. i. p. 86.

South Mexico, near Jalapa (*Schiede & Deppe*).

11. **Smilax erythrocarpa,** Kunth, Enum. v. p. 234; DC. Monogr. Phanerog. i. p. 85.

South Mexico, without locality (*Ehrenberg*), valley of Mexico (*Bourgeau*, 1131).

12. **Smilax glauca,** Walt. Fl. Carol. p. 245; Bot. Mag. t. 1846; A. Gr. Man. Bot. N. U. S. ed. 5, p. 519; DC. Monogr. Phanerog. i. p. 81.

New York southward to Texas.—South Mexico, near Oaxaca (*Galeotti*, 5482), Zongolica (*Botteri*, 1001). Hb. Kew.

13. **Smilax glaucocarpos,** Schl. in Linnæa, xviii. p. 450; DC. Monogr. Phanerog. i. p. 145.

South Mexico, Hacienda del Carmen and Mineral del Monte (*Ehrenberg*).

14. **Smilax havanensis,** Jacq. Sel. Stirp. Amer. p. 262, t. 179. fig. 102; Kunth, Enum. v. p. 173; Griseb. Fl. Brit. W. Ind. p. 586 (excl. plur. syn.); A. DC. in DC. Monogr. Phanerog. i. p. 122.

α. **vulgaris,** A. DC. l. c.

South Mexico, mountains west of Jalapa at 5000 feet (*Galeotti*, 5480).—Cuba.

15. **Smilax hispida,** Muhl. Cat. p. 92 (ubi solum nomen); A. Gr. Man. Bot. N. U. S. ed. 5, p. 519; DC. Monogr. Phanerog. i. p. 76.

New York and Michigan to Texas.—Mexico? Spec. cult. in herb. Kew.

16. **Smilax invenusta,** Kunth, Enum. v. p. 234; DC. Monogr. Phanerog. i. p. 90.

South Mexico, near Orizaba (*Bourgeau*, 2650), near Jalapa (*Coulter*, 1590). Hb. Kew.

β. **armata,** A. DC. l. c. p. 91.

South Mexico, Jalapa (*Galeotti; Linden*). Hb. Kew.

17. **Smilax jalapensis,** Schl. in Linnæa, xviii. p. 451; A. DC. in DC. Monogr. Phanerog. i. p. 86.

Smilax xalapensis, Kunth, Enum. v. p. 258.

South Mexico, near Jalapa (*Schiede*).

18. **Smilax medica,** Ch. et Schl. in Linnæa, vi. p. 47; Linnæa, xviii. p. 447; Kunth, Enum. v. p. 235; A. DC. in DC. Monogr. Phanerog. i. p. 86.

South Mexico, Papantla (*Schiede*), without locality (*Hahn*), near Tantoyuca (*Ervendberg*, 337). Hb. Kew.

β. **bracteata,** A. DC. l. c.

South Mexico, near Tantoyuca (*Ervendberg*, 336). Hb. Kew.

19. **Smilax mexicana,** Griseb. ex Kunth, Enum. v. p. 167; A. DC. in DC. Monogr. Phanerog. i. p. 117.

Smilax cumanensis, Ch. et Schl. in Linnæa, vi. p. 48, non Willd.

South Mexico, near Tampico (*Berlandier*), near Misantla (*Schiede*), Colipa (*Karwinski*).

β. **costaricæ,** A. DC. l. c.; Vatke in Linnæa. xl. p. 223 (species).

South Mexico, region of Orizaba (*Bourgeau*, 2445), Huasteca (*Ervendberg*, 363), valley of Cordova (*Bourgeau*, 1486, 1784); Costa Rica, San José (*Hoffmann*); Panama (*S. Hayes*, 630). Hb. Kew.

20. **Smilax mollis,** Humb. et Bonpl. ex Willd. Sp. Pl. iv. p. 785; Kunth, Enum. v. p. 194; A. DC. in DC. Monogr. Phanerog. i. p. 67.

South Mexico, Orizaba (*Botteri*, 973), near Jalapa (*Humboldt & Bonpland*), without locality (*Karwinski; Sartorius; Schaffner*).—West Indies; Guiana. Hb. Kew.

β. **pavoniana,** A. DC. l. c. p. 68.

South Mexico (*Pavon*).

γ. **acuminata,** A. DC. l. c.

South Mexico, near Orizaba (*Bourgeau*, 3038). Hb. Kew.

21. **Smilax moranensis,** Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 18); A. DC. in DC. Monogr. Phanerog. i. p. 87.

Smilax sylvatica, Kunth, Enum. v. p. 235 (excl. syn. *S. cordifolia*).

South Mexico, between Chico and Chapula (*Graham*), peak of Orizaba 8000 feet (*Galeotti*, 5476). Hb. Kew.

β. **schaffneriana,** A. DC. l. c. p. 88.

Mexico (*Schaffner*).

22. **Smilax multiflora,** Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 19); A. DC. in DC. Monogr. Phanerog. i. p. 210.

South Mexico, in woods near Chinantla, Oaxaca 3000 feet (*Galeotti*, 5475).

23. **Smilax obtusa,** Benth. Bot. Voy. 'Sulphur,' p. 175; A. DC. in DC. Monogr. Phanerog. i. p. 144.

South Mexico, Manzanilla Bay (*Barclay*). Hb. Kew.

24. **Smilax officinalis,** H. B. K. Nov. Gen. et Sp. i. p. 271, non alior.; Kunth,

Enum. v. p. 228; DC. Monogr. Phanerog. i. p. 149; Seem. Bot. Voy. 'Herald,' pp. 217, 218 et 219 (excl. syn. *S. papyracea* et *S. medica*).

Panama, Volcan de Chiriqui (*Warscewicz*).—Colombia. Hb. Kew.

"*S. officinalis*, Presl! e Mexico, cujus fragmentum unicum, sine fl. vel fr. in h. prag. video, admodum differt: foliis tenuissimis, nervis 2 centrali proprioribus ab eo supra basim discedentibus, parenchymate pellucide punctato, atque lineato, ex foliis fere *S. insignis*, Kunth (quæ peruviana, sed ramis non tuberculatis, passim aculeatis)."—*A. DC. in DC. Monogr. Phanerog.* i. p. 150.

25. **Smilax papyracea,** Duham. Arb. i. p. 242; DC. Monogr. Phanerog. i. p. 150?

Guatemala. Volcan de Fuego 3000 feet (*Godman & Salvin*). Hb. Kew.

The true *S. papyracea* inhabits Guiana and Brazil.

26. **Smilax rotundifolia,** Linn. Sp. Pl. ed. 1, p. 1030; A. Gr. Man. Bot. N. U. S. ed. 5, p. 519; A. DC. in DC. Monogr. Phanerog. i. p. 74 (varietates).

Smilax quadrangularis, Muehl. in Willd. Sp. Pl. iv. p. 775; Wats. Dendr. t. 109.

Smilax tetragona, Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 19), non Linn.

Canada to Texas, and westward to California.—Mexico and the West Indies.

No locality in Mexico is cited by De Candolle, merely "Mexico, Pavon in herb. Boiss. et herb. Webb. loco non dicto."

27. **Smilax schlechtendalii,** Kunth, Enum. v. p. 224; A. DC. in DC. Monogr. Phanerog. i. p. 101.

Smilax domingensis, Ch. et Schl. in Linnæa, vi. p. 48, xviii. p. 448, non Willd.

South Mexico, region of Orizaba (*Botteri*, 970; *Bourgeau*, 3256, 3282), valley of Cordova (*Bourgeau*, 1785), Misantla, San Pablo, and Hacienda de la Laguna (*Schiede & Deppe*). Hb. Kew.

β. **lindeni,** A. DC. l. c. p. 102.

South Mexico, near Jalapa 3000 feet (*Galeotti*, 7082), Mirador (*Linden*, 50), without locality (*Harris*). Hb. Kew.

28. **Smilax spinosa,** Mill. Dict. n. 8, non Poir; A. DC. in DC. Monogr. Phanerog. i. p. 210.

Smilax houstoniana, Steud. Nomencl. Bot.

South Mexico, Vera Cruz (*Houston*).

29. **Smilax subpubescens,** A. DC. in DC. Monogr. Phanerog. i. p. 69.

South Mexico, region of Orizaba (*Bourgeau*, 2578). Hb. Kew.

30. **Smilax tomentosa,** H. B. K. Nov. Gen. et Sp. i. p. 272; Kunth, Enum. v. p. 231; DC. Monogr. Phanerog. i. p. 70.

Panama, Volcan de Chiriqui (*Seemann*).—Colombia; Venezuela.

31. **Smilax wageneriana,** A. DC. in DC. Monogr. Phanerog. i. p. 143
PANAMA, Chiriqui (*Wagener*), without locality (hb. *Forsyth*). Hb. Kew.

Tribe II. ASPARAGEÆ.

Asparageæ, Benth. et Hook. Gen. Plant. iii. p. 751.

Four genera, including *Asparagus*, with 100 species, belong to this tribe, which is restricted to the Old World.

Tribe III. LUZURIAGEÆ.

Luzuriageæ, Benth. et Hook. Gen. Plant. iii. p. 751.

Of this tribe there are seven genera, mostly monotypic or ditypic, and comprising altogether only about a dozen species. Three of the genera are endemic in extratropical South America, and all of them are exclusively inhabitants of the temperate regions of the southern hemisphere.

Tribe IV. POLYGONATEÆ.

Polygonateæ, Benth. et Hook. Gen. Plant. iii. p. 752.

This tribe is confined to the northern hemisphere, and comprises six genera, including *Disporopsis*, Hance, from China, founded since the publication of the 'Genera Plantarum,' and about fifty species.

2. SMILACINA.

Smilacina, Desf. in Ann. Mus. Par. ix. p. 51, t. 9; Benth. et Hook. Gen. Plant. iii. p. 770.
Tovaria, Neck. Elem. iii. p. 190, non aliorum.

About twenty species are known, inhabiting North and Central America and temperate regions of Asia.

1. **Smilacina flexuosa,** Bertol. in Nov. Com. Acad. Bonon. iv. p. 411, t. 39, et Fl. Guat. p. 11, t. 4.
Smilacina bertolonii, Kunth, Enum. v. p. 151.
Smilax flexuosa, Hook. Ic. Pl. vi. t. 529 ?
Tovaria flexuosa, Baker, in Journ. Linn. Soc. xiv. p. 567, pro parte.
GUATEMALA (*Skinner*). Hb. Kew.

Bertoloni's original figure of this species represents the leaves with seven primary longitudinal nerves, and the blade narrowed at the base into a distinct petiole, whereas the plant figured by Hooker has rotundate, 5-nerved, sessile leaves; but Bertoloni's is a very rude drawing of a dried specimen in fruit, and may be incorrect in some particulars. We have seen only one specimen, and that was cultivated in this country, and is the type of Hooker's figure; therefore we are unable to say whether more than one species is concerned.

2. **Smilacina laxiflora,** Hemsley.

Tovaria laxiflora, Baker in Journ. Linn. Soc. xiv. p. 569.

GUATEMALA, Chilasco (*Godman & Salvin*). Hb. Kew.

3. **Smilacina nervulosa,** Hemsley.

Tovaria nervulosa, Baker in Journ. Linn. Soc. xiv. p. 569.

SOUTH MEXICO, Jalapa (ex *Torrey*). Hb. Kew.

4. **Smilacina paniculata,** Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 17); Kunth, Enum. v. p. 151 ?

Tovaria paniculata, Baker in Journ. Linn. Soc. xiv. p. 568.

Smilacina amœna, Wendl. in Otto & Dietr. Allg. Gart. Zeit. xviii. p. 137.

SOUTH MEXICO, Chiapas (*Ghiesbreght*); GUATEMALA (*Skinner*).

Whatever Marten's and Galeotti's *S. paniculata* may be, there are certainly two species included under this name by Baker. We have not seen the type of either Galeotti's or Wendland's plant, and the descriptions are insufficient, so we can only leave the matter in doubt.

5. **Smilacina salvini,** Hemsley.

Tovaria salvini, Baker in Journ. Linn. Soc. xiv. p. 567.

GUATEMALA, Volcan de Atitlan 9000 feet (*Salvin*). Hb. Kew.

6. **Smilacina scilloidea,** Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 17); Kunth, Enum. v. p. 151.

Tovaria scilloides, Baker in Journ. Linn. Soc. xiv. p. 567.

Smilacina macrophylla, Mart. et Gal. l. c. p. 16 ?

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 707), San Bartolo and Pueblo Nuevo (*Linden*, 1287), Vera Cruz to Orizaba (*Müller*, 987), Cordillera of Oaxaca at 8000 to 9000 feet (*Galeotti*, 5471). Hb. Kew.

7. **Smilacina thyrsoidea,** Hemsley.

Tovaria thyrsoidea, Baker in Journ. Linn. Soc. xiv. p. 568.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 773, 959), region of Orizaba (*Müller*, 985; *Botteri*, 138, 914). Hb. Kew.

8. **Smilacina,** sp.

GUATEMALA, Volcan de Fuego, ridge above Calderas 8300 feet (*Salvin*). Hb. Kew.

9. **Smilacina,** sp.

Tovaria flexuosa, Baker in Journ. Linn. Soc. xiv. p. 567, pro parte.

GUATEMALA (*Skinner*). Hb. Kew.

We have not ventured to give this another name, because there are three or four species of which we have seen no authentically named specimens.

Tribe V. CONVALLARIÆ.

Convallariæ, Benth. et Hook. Gen. Plant. iii. p. 752.

Four monotypic genera constitute this tribe, which is confined to the northern hemisphere and to the Old World, except the widely dispersed *Convallaria majalis.*

Tribe VI. ASPIDISTREÆ.

Aspidistreæ, Benth. et Hook. Gen. Plant. iii. p. 752.

Also only four genera and about ten species, inhabiting the mountains of North India and Burma, and China and Japan.

Tribe VII. HEMEROCALLEÆ.

Hemerocalleæ, Benth. et Hook. Gen. Plant. iii. p. 752.

Of this tribe there are six genera, numbering together about thirty-five species. About half of them belong to the genus *Kniphofia,* which is restricted to Africa, chiefly extratropical, and Madagascar; one other genus is endemic in Africa, one in New Zealand, one in Australia, one in China and Japan, and *Hemerocallis* itself is represented in Europe and Asia.

Tribe VIII. ALOINEÆ.

Aloineæ, Benth. et Hook. Gen. Plant. iii. p. 753.

This is essentially an African tribe, the few species found outside of that country having, probably, been originally introduced. Five genera are maintained, and they number 200 species.

Tribe IX. DRACENEÆ.

Draceneæ, Benth. et Hook. Gen. Plant. iii. p. 753.

There are nine genera and about 100 species of this tribe, and they are widely distributed in warm and temperate countries, though absent from Europe, and very sparsely scattered in Africa and Asia. Five of the genera are confined to Central and North America.

3. YUCCA.

Yucca, Linn. Gen. Plant. n. 429; Benth. et Hook. Gen. Plant. iii. p. 778.

This genus has its greatest concentration in Mexico, a few species extending southward into Central America, and four or five occurring in the Southern States of North America. The number of distinct species is uncertain; Engelmann, in 1873, defined twelve, and Baker, in 1881, twenty-one, several of which, however, are only known from cultivated plants.

1. **Yucca aloifolia,** Linn. Sp. Pl. ed. 1, p. 319; Engelm. in Trans. Acad. St.

Louis, iii. p. 34; Baker in Journ. Linn. Soc. xviii. p. 221; Griseb. Fl. Brit. W. Ind. p. 582; DC. Plantes Grasses, t. 20; Red. Lil. t. 401, 402; Bot. Mag. t. 1700.

Yucca serrulata, Haworth, Synop. Pl. Succ. p. 70.

Yucca crenulata, Y. arcuata, Y. conspicua et *Y. tenuifolia,* Haworth, Suppl. Pl. Succ. pp. 32–34.

Yucca draconis, Linn. Sp. Pl. ed. 1, p. 319.

South Carolina to Florida.—South Mexico, Zacatecas (*Coulter*, 1571), Cuernavaca (*Bourgeau*, 1408). Hb. Kew., Hort. Kew.

2. **Yucca angustifolia,** Pursh, Fl. Am. Sept. i. p. 227; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 50; Baker in Journ. Linn. Soc. xviii. p. 226 (varietates); Bot. Mag. t. 2236.

Yucca stricta, Sims in Bot. Mag. t. 2222; Kunth, Enum. iv. p. 273; Rev. Hort. 1859, p. 467, figg. 101 et 102.

Missouri and Iowa to New Mexico and Louisiana.—North Mexico, Chihuahua (*Wright*). Hb. Kew., Hort. Kew.

3. **Yucca baccata,** Torr. Bot. U. S. & Mex. Bound. Surv. p. 221; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 44; Baker in Journ. Linn. Soc. xviii. p. 229 (varietates 2); Ill. Hort. 1873, t. 115.

Yucca filifera, Rev. Hort. 1876, p. 432, fig. 97.

Utah and Colorado to California, Arizona, and Texas.—North Mexico, Chihuahua (*Wislizenus*), Parras, Coahuila (*Thurber*), Saltillo (*Gregg*). Hb. Kew., Hort. Kew.

4. **Yucca boerhaavii,** Baker in Gard. Chron. 1870, p. 127, et Journ. Linn. Soc. xviii. p. 224; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 41.

Mexico?

5. **Yucca constricta,** Buckley in Proc. Philad. Acad. 1862, p. 8?; Baker in Journ. Linn. Soc. xviii. p. 229.

Yucca angustifolia, Carrière in Rev. Hort. 1860, p. 20, figg. 3 et 4, non Pursh.

Yucca polyphylla, Baker in Gard. Chron. 1870, p. 1088.

Yucca albospica, Flore des Serres, série 2, vii. p. 110, fig. 1612.

Yucca angustifolia, β. elata, Engelm. in Trans. Acad. Sc. St. Louis, p. 50.

Utah to Arizona.—North Mexico. Hort. Kew.

6. **Yucca desmetiana,** Baker in Gard. Chron. 1870, p. 1217, et Journ. Linn. Soc. xviii. p. 222; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 41.

Mexico. Hort. Kew.

7. **Yucca flexilis,** Carrière in Rev. Hort. 1859, p. 308, fig. 89; Baker in Journ. Linn. Soc. xviii. p. 224 (varietates).

Yucca ensifolia, Baker, Refug. Bot. t. 318.

Mexico. Hort. Kew.

8. **Yucca funifera,** Lemaire, Ill. Hort. 1866, Misc. p. 99; Baker in Journ. Linn. Soc. xviii. p. 228.

Mexico.

9. **Yucca gigantea,** Lemaire, Ill. Hort. 1859, Misc. p. 91; Rev. Hort. 1860, p. 222; Baker in Journ. Linn. Soc. xviii. p. 224.

MEXICO?

10. **Yucca guatemalensis,** Baker in Refug. Bot. t. 313, et Journ. Linn. Soc. xviii. p. 222; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 38.

SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*); GUATEMALA (*Ehrenberg*). Hb. Kew., Hort. Kew.

11. **Yucca peacockii,** Baker in Journ. Linn. Soc. xviii. p. 223.

MEXICO?

12. **Yucca rupicola,** Scheele in Linnæa, xxiii. p. 143; Baker in Journ. Linn. Soc. xviii. p. 222; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 48.

Yucca lutescens, Carrière in Rev. Hort. 1858, p. 579.

TEXAS; NEW MEXICO.—NORTH MEXICO, Chihuahua (*Wright*), Mapimi, Coahuila (*Gregg*). Hb. Kew., Hort. Kew.

13. **Yucca schottii,** Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 46; Baker in Journ. Linn. Soc. xviii. p. 228.

NORTH MEXICO, valley of the Santa Cruz river, Sonora (*Schott*).

14. **Yucca treculeana,** Carrière in Rev. Hort. 1858, p. 580; Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 41; Baker in Journ. Linn. Soc. xviii. p. 226.

Yucca aspera, Regel in Ind. Sem. Hort. Petrop. 1858, et Gartenflora, 1859, p. 14.

Yucca canaliculata, Hook. Bot. Mag. t. 5201.

TEXAS.—NORTH MEXICO, Saltillo, Parras, Chihuahua (*Wislizenus; Gregg*); SOUTH MEXICO, Toluca (*Andrieux*, 64). Hb. Kew., Hort. Kew.

15. **Yucca yucatana,** Engelm. in Trans. Acad. Sc. St. Louis, iii. p. 37; Baker in Journ. Linn. Soc. xviii. p. 221.

SOUTH MEXICO, ruins of Nohpat, Yucatan (*Schott*).

4. NOLINA.

Nolina, Michx. Fl. Bor.-Am. i. p. 207; Benth. et Hook. Gen. Plant. iii. p. 780.

Roulinia, Brongn. in Ann. Sc. Nat. série 2, xiv. p. 320.

Beaucarnea, Lemaire, Ill. Hort. viii. (1861), Misc. p. 59, cum icone.

A genus of about twelve known species, peculiar to the Texano-Mexican region.

1. **Nolina hartwegiana,** Hemsley.

Beaucarnea hartwegiana, Baker in Journ. Bot. p. 327, ex parte, et in Journ. Linn. Soc. xviii. p. 237.

Dasylirion hartwegianum, Zucc. Pl. Nov. Herb. et Hort. Monac. fasc. 5. p. 22.

Dasylirion junceum, Zucc. l. c. p. 19?

Roulinia longifolia, Brongn. in Ann. Sc. Nat. série 2, xiv. p. 320.

Cordyline longifolia, Benth. Pl. Hartw. p. 53.
Beaucarnea gracilis, Lemaire, Ill. Hort. viii. (1861), Misc. p. 61 ?

SOUTH MEXICO, Zacatecas (*Hartweg*). Hb. Kew.

2. **Nolina humilis,** S. Wats. in Proc. Am. Acad. xiv. p. 248, ex parte; Baker, Journ. Linn. Soc. xviii. p. 237. (Tab. XCIII.)

Beaucarnea humilis, Baker, l. c.

NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 875). Hb. Kew.

EXPLANATION OF TAB. XCIII.

Portion of a plant of *Nolina humilis,* natural size. Fig. 1, section of a leaf; 2, an unopened flower; 3, an opened flower; 4, a pistil; 5, a vertical section of the same; 6, a fruit; 7, a seed: all more or less enlarged.

3. **Nolina lindheimeriana,** S. Wats. in Proc. Am. Acad. xiv. p. 247.

Beaucarnea lindheimeriana, Baker in Journ. Linn. Soc. xviii. p. 236.
Dasylirion lindheimerianum, Scheele in Linnæa, xxv. p. 262.
Dasylirion tenuifolium, Torrey, Bot. U. S. & Mex. Bound. Surv. p. 215.

TEXAS; NEW MEXICO.—NORTH MEXICO, El Podrero, Sonora (*Schott; Wright*). Hb. Kew.

4. **Nolina longifolia,** Hemsley.

Beaucarnea longifolia, Baker in Journ. Bot. 1872, p. 324, et in Journ. Linn. Soc. xviii. p. 234.
Dasylirion longifolium, Karw. et Zucc. in Zucc. Pl. Nov. Herb. et Hort. Monac. fasc. v. p. 224, t. 1. fig. 2; Morr. in Belg. Hort. 1865, p. 321, t. 20.
Yucca longifolia, Karw. in Cat. Hort. Monac. ex Brongn.
Roulinia karwinskiana, Brong. in Ann. Sc. Nat. série 2, xiv. p. 320.

MEXICO (*Karwinski*).

5. **Nolina parviflora,** Hemsley.

Beaucarnea parviflora, Baker in Journ. Bot. 1872, p. 328, et in Journ. Linn. Soc. xviii. p. 234.
Cordyline parviflora, H. B. K. Nov. Gen. et Sp. i. p. 269, et vii. t. 674.
Dracæna parviflora, Willd. ex Schult. Syst. Veg. vii. p. 348.
Dasylirion humboldtii, Kunth, Enum. v. p. 42.
Roulinia humboldtiana, Brongn. in Ann. Sc. Nat. série 2, xiv. p. 320.

SOUTH MEXICO, plateau of Mexico at about 7000 feet (*Humboldt & Bonpland*).

6. **Nolina recurvata,** Hemsley.

Beaucarnea recurvata, Lemaire, Ill. Hort. 1861, Misc. p. 59, cum icone; Baker in Journ. Linn. Soc. xviii. p. 234 (varietates); Gard. Chron. 1870, p. 1445, fig. 254.
Beaucarnea stricta, Lemaire, l. c.

SOUTH MEXICO, Santa Fé (*Hahn*), Guadalupe, valley of Mexico (*Bourgeau*, 520). Hb. Kew.

7. **Nolina watsoni,** Hemsley. (Tab. XCIV.)

Beaucarnea watsoni, Baker in Journ. Linn. Soc. xviii. p. 236.
Nolina humilis, S. Wats. in Proc. Am. Acad. xiv. p. 248, ex parte.

NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 874). Hb. Kew.

EXPLANATION OF TAB. XCIV.

Portion of a plant of *Nolina watsoni*, natural size. Fig. 1, section of a leaf; 2, a flower partially open; 3, a flower quite open; 4, a pistil; 5, a vertical section of the same; 6, a cross section of the same: all enlarged. Fig. 7, a fruit, natural size; 8, a fruit, enlarged.

5. DASYLIRION.

***Dasylirion*,** Zucc. in Abhandl. Akad. Münch. iii. p. 221, t. 1 (Pl. Nov. Hort. et Herb. Monac. fasc. iv.); Benth. et Hook. Gen. Plant. iii. p. 780.

About ten species, restricted to the Texano-Mexican region.

1. **Dasylirion acrotrichum,** Zucc. Pl. Nov. Hort. et Herb. Monac. fasc. iv. t. 1. fig. 4; Kunth, Enum. v. p. 40; Baker in Journ. Linn. Soc. xviii. p. 239; Bot. Mag. t. 5030, icon in Flore des Serres, t. 1448, iterata.

Yucca acrotricha, Schiede in Linnæa, iv. p. 230, et vi. p. 52.
Roulinia acrotricha et *R. gracilis*, Brongn. in Ann. Sc. Nat. série 2, xiv. p. 320.
Dasylirion gracile, Zucc. Pl. Nov. Hort. et Herb. Monac. v. p. 22.
Dasylirion graminifolium, S. Wats. in Proc. Am. Acad. xiv. p. 249, non Zucc.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 876); South Mexico, Cerro de la Ventana (*Schiede*). Cultivated specimens only in Kew herbarium.

2. **Dasylirion berlandieri,** S. Wats. in Proc. Am. Acad. xiv. p. 249; Baker in Journ. Linn. Soc. xviii. p. 240.

North Mexico, Cerro de la Silla, Nuevo Leon (*Berlandier*, 3218). Hb. Kew.

3. **Dasylirion hookeri,** Lemaire, ex Morren in Belg. Hort. xv. p. 324; Baker in Journ. Linn. Soc. xviii. p. 240.

Dasylirion hartwegianum, Hook. Bot. Mag. t. 5099, non Zucc.
Dasylirion cæspitosum, Scheidw. in Koch's Wochenschrift, 1861, p. 286?
Beaucarnea hookeri, Baker in Journ. Bot. 1872, p. 327.

South Mexico, Real del Monte (*Repper*). Cultivated specimens only in Kew herbarium.

4. **Dasylirion glaucophyllum,** Hook. Bot. Mag. t. 5041; Baker in Journ. Linn. Soc. xviii. p. 239.

Dasylirion glaucum, Carrière, Rev. Hort. 1872, p. 435, cum figura.
Dasylirion serratifolium, Baker in Journ. Bot. 1872, p. 298, ex parte.

South Mexico, Real del Monte (*Repper*). Cultivated specimens only in Kew herbarium.

S. Watson (Proc. Am. Acad. xviii. p. 163) doubtingly refers to this species a specimen collected by Palmer at Monclova, Coahuila, North Mexico.

5. **Dasylirion graminifolium,** Zucc. Pl. Nov. Hort. et Herb. Monac. fasc. iv

p. 225, t. 1; Otto & Dietr. Allg. Gart. Zeit. 1841, p. 121, t. 1; Baker in Journ. Linn. Soc. xviii. p. 238; Baker in Journ. Bot. 1872, p. 297, ex parte.
Yucca graminifolia, Zucc. in Cat. Hort. Monac. 1837.
MEXICO.

6. **Dasylirion pliabile**, Baker in Journ. Linn. Soc. xviii. p. 240.
SOUTH MEXICO, Sisal, Yucatan (*Schott*).

7. **Dasylirion quadrangulatum**, S. Wats. in Proc. Am. Acad. xiv. p. 250; Baker in Journ. Linn. Soc. xviii. p. 241.
NORTH MEXICO, Sierra Nola, Tamaulipas (*Palmer*).

8. **Dasylirion serratifolium**, Karw. et Zucc. in Zucc. Pl. Nov. Hort. et Herb. Monac. fasc. iv. p. 225; Baker in Journ. Linn. Soc. xviii. p. 240.
Dasylirion laxiflorum, Baker in Journ. Bot. 1872, p. 299.
SOUTH MEXICO, between San Dionisio and Tolotopa, Oaxaca (*Andrieux*, 68). Hb. Kew.
[*Dasylirion wheeleri*, S. Wats. (Proc. Am. Acad. xiv. p. 249), from Arizona and New Mexico, may occur within our limits.]

Tribe X. ASPHODELEÆ.

Asphodeleæ, Benth. et Hook. Gen. Plant. iii. p. 754.

Including two new Mexican genera lately described by S. Watson, this tribe includes thirty-eight genera, comprising about 265 species, spread over the whole range of the order. Several genera of this tribe, as *Schœnolirion* and *Chlorogalum*, are restricted, so far as at present known, to the countries immediately touching on our northern boundary.

6. ANTHERICUM.

Anthericum, Linn. Gen. Plant. n. 422, pro parte; Benth. et Hook. Gen. Plant. iii. p. 788.
Phalangium, Juss. Gen. Plant. p. 52.

A genus of about fifty species, inhabiting Europe, Tropical and Extratropical Africa, and North and South America.

1. **Anthericum flavescens**, Schult. Syst. Veg. vii. p. 1692; Kunth, Enum. iv. p. 596; Baker in Journ. Linn. Soc. xv. p. 318.
SOUTH MEXICO, without locality (*Karwinski*), Zacatecas (*Coulter*, 1562). Hb. Kew.

2. **Anthericum humboldtii**, Hemsley.
Anthericum ciliatum, Schult. Syst. Veg. vii. p. 466, non Linn.; Baker in Journ. Linn. Soc. xv. p. 307.
Phalangium ciliatum, H. B. K. Nov. Gen. et Sp. i. p. 276, et vii. t. 676.
NORTH MEXICO, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 889). —VENEZUELA; PERU. Hb. Kew.

3. **Anthericum leptophyllum,** Baker in Journ. Linn. Soc. xv. p. 317; Proc. Am. Acad. xviii. p. 164.

Echeandia leptophylla, Benth. Pl. Hartw. p. 25; Kunth, Enum. iv. p. 629.

Hesperanthes leptophylla, S. Wats. in Proc. Am. Acad. xiv. p. 241.

Echeandia graminea, Mart. et Gal. in Bull. Acad. Brux. ix. 2 (reprint, p. 16); Kunth, Enum. iv. p. 699.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 890, pro parte; *Schaffner*); South Mexico, Tehuacan at 5500 feet (*Galeotti*, 5378), Aguas Calientes (*Hartweg*), Zacoalco, valley of Mexico (*Bourgeau*, 659). Hb. Kew.

4. **Anthericum nanum,** Baker in Journ. Linn. Soc. xv. p. 305.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 888); South Mexico, valley of Mexico (*Bourgeau*, 415; *Schaffner*, 502), Vera Cruz to Orizaba (*Müller*, 1329), Real del Monte (*Coulter*, 1565), Zimapan (*Coulter*, 1564). Hb. Kew.

Var. **rude,** Baker, l. c. p. 306.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 698). Hb. Kew.

5. **Anthericum scabrellum,** Baker in Journ. Linn. Soc. xv. p. 318.

Phalangium scabrellum, Benth. Pl. Hartw. p. 293.

Hesperanthes scabrella, S. Wats. in Proc. Am. Acad. xiv. p. 241.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 890, in part); South Mexico, Lagos (*Hartweg*). Hb. Kew.

6. **Anthericum skinneri,** Baker in Journ. Linn. Soc. xv. p. 318.

Guatemala, without locality (*Skinner*). Hb. Kew.

7. **Anthericum stenocarpum,** Baker in Journ. Linn. Soc. xv. p. 317; Proc. Am. Acad. xviii. p. 164.

Hesperanthes stenocarpa, S. Wats. in Proc. Am. Acad. xiv. p. 241.

North Mexico, without locality (*Gregg*), Lerios, Coahuila (*Palmer*, 2012). Hb. Kew.

8. **Anthericum torreyi,** Baker in Journ. Linn. Soc. xv. p. 317.

Echeandra terniflora, var. (?) *angustifolia,* Torr. Bot. U. S. & Mex. Bound. Surv. p. 219.

Hesperanthes torreyi, S. Wats. in Proc. Am. Acad. xiv. p. 241.

Texas; New Mexico.—North Mexico, Monterey (*Edwards*). Hb. Kew.

9. **Anthericum vestitum,** Baker in Journ. Linn. Soc. xv. p. 307.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1331). Hb. Kew.

7. ECHEANDIA.

Echeandia, Ort. Nov. Pl. Dec. pp. 90 et 135, t. 18; Benth. et Hook. Gen. Plant. iii. p. 789.

Limited to the following species:—

1. **Echeandia terniflora,** Ort. Nov. Pl. Dec. pp. 90 et 135, t. 18; Red. Lil. t. 313; Kunth, Enum. iv. p. 627; Baker in Journ. Linn. Soc. xv. p. 288.

Echeandia albiflora et *E. hænkeana,* Kunth, l. c. pp. 628 et 629.

Anthericum reflexum, Cav. Ic. Pl. iii. p. 21, t. 241.

Conanthera echeandia, Pers. Synop. i. p. 370; Link et Otto, Ic. Pl. Rar. Hort. Berol. p. 5, t. 3.

Conanthera albiflora, Ch. et Schl. in Linnæa, vi. p. 50.

Echeandia leucantha, Klotzsch ex Kunth, l. c. p. 628.

Echeandia albiflora, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 15).

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 890, in part); South Mexico, Zimapan (*Coulter*, 1561), near Jalapa 3000 to 4000 feet (*Galeotti*, 5377), barranca near Santa Fé, near Orizaba, and valley of Cordova (*Bourgeau*, 413, 3002, 2307), Orizaba (*Botteri*), Cordillera of Oaxaca at 8000 feet (*Galeotti*, 5366); Guatemala, Volcan de Fuego at 7000 feet (*Salvin*).—Colombia; Venezuela; Guiana. Hb. Kew.

We have followed Baker in referring all the forms of this genus to one species, because the material we have seen is insufficient for settling the question; yet we think there is more than one species concerned. Salvin's specimen from Guatemala is a very robust plant, with capsules twice the size of those of any of the Mexican specimens. According to Galeotti, the form *albiflora* delights in humid localities near Mirador, at an elevation of 3000 feet; while typical *terniflora*, which has yellow flowers, grows on the trachytic rocks of the volcano of Orizaba at an elevation of 11,000 feet.

8. GLYPHOSPERMA.

Glyphosperma, S. Wats. in Proc. Am. Acad. xviii. p. 164.

A Mexican monotype.

1. **Glyphosperma palmeri,** S. Wats. in Proc. Am. Acad. xviii. p. 164; Bot. Mag. t. 6717.

North Mexico, Saltillo, Coahuila (*Palmer*, 1320). Hb. Kew.

9. HEMIPHYLACUS.

Hemiphylacus, S. Wats. in Proc. Am. Acad. xviii. p. 165.

A Mexican monotype.

1. **Hemiphylacus latifolius,** S. Wats. in Proc. Am. Acad. xviii. p. 164.

North Mexico, Saltillo, Coahuila (*Palmer*, 1319). Hb. Kew.

Tribe XI. JOHNSONIEÆ.

Johnsonieæ, Benth. et Hook. Gen. Plant. iii. p. 756.

Of this tribe there are nine genera and about twenty-four species. All the genera, except the monotypic *Aphyllanthes* of the Mediterranean region, are endemic in Australia.

Tribe XII. ALLIEÆ.

Allieæ, Benth. et Hook. Gen. Plant. iii. p. 756.

This tribe numbers about 350 species, referred to twenty-four genera, whereof twelve are monotypic and about six consist of only two or three species, while *Allium* itself is credited with 250 species. Seventeen of the small genera are restricted to America, many of them to Chili; but, with the exception of Australia, New Zealand, and Polynesia, the members of this tribe are generally dispersed.

10. MILLA.

Milla, Cav. Ic. Pl. ii. p. 76, t. 196; Benth. Gen. Plant. iii. p. 799.

As limited by S. Watson and Bentham and Hooker, this is a monotypic genus.

1. **Milla biflora,** Cav. Ic. Pl. ii. p. 76, t. 196; Kunth, Enum. iv. p. 478; S. Wats. in Proc. Am. Acad. xiv. p. 240, et xviii. p. 165; Bot. Reg. t. 1555; Flore des Serres, t. 1459.

Diphalangium graminifolium, Schauer in Linnæa, xix. p. 702.

NEW MEXICO; SOUTH ARIZONA.—NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 884; *Schaffner*); SOUTH MEXICO, Guadalupe (*Bourgeau*, 656), Huahuapan, Oaxaca (*Andrieux*, 66), Aguas Calientes (*Hartweg*, 233), Tlalpujahua (*Graham*, 359), Real del Monte (*Coulter*, 1545), near Morelia 5000 to 7000 feet (*Galeotti*, 5508), Vera Cruz to Orizaba (*Müller*, 135). Hb. Kew.

Bentham and Hooker retain *Diphalangium* as a distinct genus near *Milla*, differing, if correctly described by Schauer, in stature, in the insertion of the stamens, and in the half inferior capsule.

11. BESSERA.

Bessera, Schultes in Linnæa, iv. p. 121; Benth. et Hook. Gen. Plant. iii. p. 801.

A Mexican monotype.

1. **Bessera elegans,** Schultes in Linnæa, iv. p. 121; Lindl. Bot. Reg. 1839, t. 34; Kunth, Enum. iv. p. 477; Baker in Journ. Linn. Soc. xi. p. 373.

Pharium fistulosum, Herbert in Bot. Reg. t. 1546.

Bessera multiflora, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 14); Kunth, Enum. iv. p. 699.

Bessera miniata, Lemaire in Flore des Serres, t. 424.

SOUTH MEXICO, Michoacan, near Arumbaro and Uruapan, 3000 to 4000 feet (*Galeotti*, 5506), Lagos and Aguas Calientes (*Hartweg*), without locality (*Bates*). Hb. Kew.

12. NOTHOSCORDUM.

Northoscordum, Kunth, Enum. iv. p. 457; Benth. et Hook. Gen. Plant. iii. p. 802.

A genus of ten species, one of which is a native of China, and all the rest of extra-tropical and Andine America. Two of the American species (especially *N. fragrans*) are naturalized in some parts of the Old World.

1. **Nothoscordum striatum,** Kunth, Enum. iv. p. 459; Refug. Bot. v. t. 304; S. Wats. in Proc. Am. Acad. xviii. p. 165.

Allium striatum, Jacq. Ic. Pl. Rar. t. 366; Red. Lil. t. 50; Regel, Allior. Monogr. p. 216; Griseb. Fl. Brit. W. Ind. p. 581.

Ornithogalum bivalve, Linn. Sp. Pl. ed. 1, p. 306.

CANADA southward.—NORTH MEXICO, Monclova, Coahuila and Guajuco, Nuevo Leon (*Palmer*, 1318), San Luis Potosi (*Parry & Palmer*, 886; *Schaffner*, 537), Corallitas River, Sonora (*Smith*); SOUTH MEXICO, Mixcoax, valley of Mexico (*Bourgeau*, 238), Aguas Calientes (*Hartweg*), Ciudad Real, Chiapas (*Linden*, 1263).—Southward to CHILI and in the WEST INDIES. Hb. Kew.

13. ALLIUM.

Allium, Linn. Gen. Plant. n. 409; Benth. et Hook. Gen. Plant. iii. p. 802.

About 250 species, widely spread in the temperate and subtropical parts of the northern hemisphere, and extending in Africa as far south as Abyssinia. Those wild in South Africa are introduced European and American species. The greatest concentration of species is in Turkestan and the adjoining countries.

1. **Allium bigelovii,** S. Wats. in King's Rep. v. p. 487, t. 38. figg. 8 et 9, et Proc. Am. Acad. xiv. p. 231.

NEW MEXICO; ARIZONA.—NORTH MEXICO, within the old boundary near Silver City (*Palmer*).

2. **Allium glandulosum,** Link et Otto, Ic. Pl. Rar. Hort. Berol. i. p. 33, t. 17; Otto & Dietr. Allg. Gart. Zeit. vi. p. 293; Regel, Allior. Monogr. p. 230; S. Wats. in Proc. Am. Acad. xiv. p. 235.

Allium longifolium, Lindl. Bot. Reg. t. 1034, non Spreng.

SOUTH MEXICO, near the city of Mexico (*Schiede*), peak of Orizaba 8500 to 12,000 feet (*Galeotti*, 5519; *Linden*, 243; *Liebmann*), Real del Monte (*Coulter*, 1567), near Zimapan (*Galeotti*, 5510). Hb. Kew.

3. **Allium kunthii,** Don, Monogr. All. in Mem. Wern. Nat. Hist. Soc. vi. p. 82; Kunth, Enum. iv. p. 453; Regel, Allior. Monogr. p. 94.

Schœnoprasum lineare, H. B. K. Nov. Gen. et Sp. i. p. 277, et vii. p. 441.

SOUTH MEXICO, between Santa Cruz de la Sierra and El Gigante at about 7800 feet (*Humboldt & Bonpland*).

4. **Allium longifolium,** Spreng. Syst. Veg. ii. p. 38; Don in Mem. Wern. Nat. Hist. Soc. vi. p. 81; Kunth, Enum. iv. p. 450; Regel, Allior. Monogr. p. 231.

Schœnoprasum longifolium, H. B. K. Nov. Gen. et Sp. i. p. 277.

SOUTH MEXICO, near Queretaro at about 6000 feet (*Humboldt & Bonpland*).

5. **Allium mutabile,** Michx. Fl. Bor.-Am. i. p. 195; Don in Mem. Wern. Nat. Hist. Soc. vi. p. 74; Red. Lil. t. 240; S. Wats. in Proc. Am. Acad. xiv. p. 227; Torrey, Bot. U. S. & Mex. Bound. Surv. p. 217.

Allium drummondii et *Allium mobilense,* Regel, Allior. Monogr. pp. 112 et 121.

North Carolina and Florida to Arkansas and New Mexico.—North Mexico, Chihuahua (*Thurber*), Presidio del Norte and other places on the Rio Grande (*Bigelow*).

6. **Allium plummeræ,** S. Wats. in Proc. Am. Acad. xviii. p. 195.

North Mexico, Tanner's Cañon, Huachuca Mountains, Southern Arizona (*Lemmon*). We are not sure whether this locality is south of the Gila, our northern boundary.

7. **Allium reticulatum,** Nutt. in Fras. Cat. ex Torr. Bot. U. S. & Mex. Bound. Surv. p. 217; Hook. Fl. Bor.-Am. t. 195; S. Wats. in Proc. Am. Acad. xiv. p. 227.

Allium stellatum, var., Sims, Bot. Mag. t. 1840.

Saskatchewan to Arizona and New Mexico.—North Mexico, Chihuahua (*Wright*).

8. **Allium scaposum,** Benth. Pl. Hartw. p. 26; Regel, Allior. Monogr. p. 94; S. Wats. in Proc. Am. Acad. xviii. p. 165.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 885; *Schaffner*), Soledad, Coahuila (*Palmer*); South Mexico, Guanajuato (*Dugès*), Aguas Calientes (*Hartweg*), Guadalupe, Zacoálco (*Bourgeau*, 741). Hb. Kew.

Tribe XIII. SCILLEÆ.

Scilleæ, Benth. et Hook. Gen. Plant. iii. p. 758.

An exclusively Old-World tribe comprising twenty-one genera and about 360 species, a large proportion of which are concentrated in South Africa.

Tribe XIV. TULIPEÆ.

Tulipeæ, Benth. et Hook. Gen. Plant. iii. p. 759.

This tribe is generally dispersed in the temperate and subtropical regions of the northern hemisphere. It consists of seven genera and nearly 200 species. The genus *Gagea* and the larger genus *Tulipa* are the only ones not represented in North America, where the widely dispersed and familiar genera *Lilium* and *Fritillaria* approach, though they are not known to enter our northern boundary.

14. CALOCHORTUS.

Calachortus, Pursh, Fl. Am. Sept. i. p. 240; Benth. et Hook. Gen. Plant. iii. p. 820.
Cyclobothra, Don in Sweet's Brit. Fl. Gard. t. 273, et ser. 2, t. 20.

An exclusively North-American genus, inhabiting the western side chiefly, and ranging from British Columbia southward to South Mexico. Baker defines twenty-one species, which number S. Watson in a later monograph raises to thirty-two, partly by additional species and partly by regarding some of Baker's varieties as distinct species.

1. **Calochortus bonplandianus,** Schult. f. in Rœm. et Schult. Syst. Veg. vii. p. 1532; S. Wats. in Proc. Am. Acad. xiv. p. 267.

Calochortus purpureus, Baker in Journ. Linn. Soc. xiv. p. 308, pro parte.
Cyclobothra purpurea, Sweet, Brit. Fl. Gard. ser. 2, t. 20.
Fritillaria purpurea, H. B. K. Nov. Gen. et Sp. i. p. 288.
Cyclobothra propinqua, Schauer in Linnæa, xix. p. 701.
Cyclobothra grandiflora, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 13).

South Mexico, ruins of Pazcuaro and Morelia (*Galeotti*, 5512, 5513), without locality (*Graham*), near Pazcuaro 6000 to 7000 feet (*Humboldt & Bonpland*), without locality (*Aschenborn*). Hb. Kew.

2. **Calochortus flavus,** Schult. f. in Rœm. et Schult. Syst. Veg. vii. p. 1535; The Botanist, iv. t. 170; Baker in Journ. Linn. Soc. xiv. p. 308; S. Wats. in Proc. Am. Acad. xiv. p. 268.

Cyclobothra flava, Lindl. Bot. Reg. sub t. 1662; Kunth, Enum. iv. p. 229.
Fritillaria barbata, H. B. K. Nov. Gen. et Sp. i. p. 288, et vii. t. 677.
Cyclobothra barbata, Sweet, Fl. Gard. t. 273.
Cyclobothra lutea, Lindl. Bot. Reg. t. 1663.
Calochortus pallidus, Schult. f. in Rœm. et Schult. Syst. Veg. vii. p. 1533.
Cyclobothra pallida, Lindl. Bot. Reg. sub t. 1662.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 891), San Miguelito mountains (*Schaffner*); South Mexico, Real del Monte and Zimapan (*Coulter*, 1556, 1557, 1558), Zacoalco, valley of Mexico (*Bourgeau*, 657), Chapultepec (*Bilimek*), Morelia (*Hartweg*). Hb. Kew.

3. **Calochortus fuscus,** Schult. f. in Rœm. et Schult. Syst. Veg. vii. p. 1534; S. Wats. in Proc. Am. Acad. xiv. p. 267.

Cyclobothra fusca, Lindl. in Bot. Reg. sub t. 1662; Kunth, Enum. iv. p. 230.

Mexico (*Karwinski*).

4. **Calochortus ghiesbreghtianus,** S. Wats. in Proc. Am. Acad. xiv. p. 268.

South Mexico, Chiapas &c. (*Ghiesbreght*, 661). Hb. Kew.

5. **Calochortus hartwegii,** Benth. Pl. Hartw. p. 26; Baker in Journ. Linn. Soc. xiv. p. 307; S. Wats. in Proc. Am. Acad. xiv. p. 267.

Cyclobothra hartwegii, Kunth, Enum. iv. p. 231.

South Mexico, Aguas Calientes (*Hartweg*).

6. **Calochortus spatulatus,** S. Wats. in Proc. Am. Acad. xiv. p. 267.

South Mexico, Oaxaca (*Ghiesbreght*).

Tribe XV. COLCHICEÆ.

Colchiceæ, Benth. et Hook. Gen. Plant. iii. p. 760.

A small tribe of four genera and about forty species, restricted to the northern hemisphere in the Old World.

Tribe XVI. ANGUILLARIEÆ.

Anguillarieæ, Benth. et Hook. Gen. Plant. iii. p. 760.

Eight genera, embracing about thirty species, constitute this tribe, which is restricted to the Old World, and almost exclusively to South Africa and Australia, there being a few outliers in the Mediterranean region, Tropical Africa, Madagascar, and India.

Tribe XVII. NARTHECIEÆ.

Narthecieæ, Benth. et Hook. Gen. Plant. iii. p. 760.

Twelve genera, numbering thirty-four species, scattered over nearly the whole area of the Order, including the country immediately to the north of Mexico and the Andes of South America.

Tribe XVIII. UVULARIEÆ.

Uvularieæ, Benth. et Hook. Gen. Plant. iii. p. 761.

Nine genera with thirty-four species, widely scattered. The exclusively North-American genus *Uvularia* may yet be found within our limits.

Tribe XIX. MEDEOLEÆ.

Medeoleæ, Benth. et Hook. Gen. Plant. iii. p. 762.

Six genera, numbering about twenty-five species, confined to temperate regions of the northern hemisphere, and most numerous in North America, though none has been found to the south of our northern boundary.

Tribe XX. VERATREÆ.

Veratreæ, Benth. et Hook. Gen. Plant. iii. p. 762.

Five genera, numbering about thirty-four species, constitute this tribe. Two of the genera and twenty-four or twenty-five of the species are peculiar to North America and the rest to temperate Asia and Europe.

15. STENANTHIUM.

Stenanthium, A. Gray in Ann. Lyc. N. York, iv. p. 119; Benth. et Hook. Gen. Plant. iii. p. 835.

Species five, whereof one inhabits the island of Sachalin and the rest North America.

1. **Stenanthium frigidum,** Kunth, Enum. iv. p. 190; Baker in Journ. Linn. Soc. xvii. p. 484.

Veratrum frigidum, Ch. et Schl. in Linnæa, vi. p. 46; Benth. Pl. Hartw. p. 53.

South Mexico, peak of Orizaba 9000 to 12,500 feet (*Linden*, 57; *Galeotti*, 5583; *Liebmann*), Anganguio 9000 feet (*Hartweg*), near Chalco (*Schaffner*), San Felipe, Oaxaca (*Andrieux*, 67). Hb. Kew.

16. ZYGADENUS.

Zygadenus, Michx. Fl. Bor.-Am. i. p. 213, t. 22 (errore *Zigadenus*); Benth. et Hook. Gen. Plant. iii. p. 835.

Of this genus twelve species are enumerated, one of which is a native of Siberia, and all the rest of North America.

1. **Zygadenus mexicanus,** Hemsley.

Anticlea mexicana, Kunth, Enum. iv. p. 193; Baker in Journ. Linn. Soc. xvii. p. 483.
Helonias virescens, H. B. K. Nov. Gen. et Sp. i. p. 267.
Veratrum virescens, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 10).
Zygadenus volcanicus, S. Wats. in Proc. Am. Acad. xviii. p. 165, non Benth.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 892; *Schaffner*); South Mexico, Zimapan (*Coulter*, 1563), Cordillera of San Felipe, near Oaxaca, at 9000 feet (*Galeotti*, 5584; *Andrieux*, 70). Hb. Kew.

2. **Zygadenus porrifolius,** Greene ex S. Wats. in Proc. Am. Acad. xviii. p. 166.

North Mexico, in the Sierra Madre, south of Saltillo (*Palmer*, 1321). Hb. Kew.

3. **Zygadenus volcanicus,** Benth. Pl. Hartw. p. 96; Kunth, Enum. iv. p. 198.

Anticlea volcanica, Baker in Journ. Linn. Soc. xvii. p. 482.

Guatemala, Volcan de Agua at about 11,000 feet (*Hartweg*, 626). Hb. Kew.

We have only seen the original specimen of this species, which is very distinct from *Z. mexicanus*, with which Watson has confused it.

17. SCHŒNOCAULON.

Schœnocaulon, A. Gray in Ann. Lyc. N. York, iv. p. 127; Benth. et Hook. Gen. Plant. iii. p. 836.

A genus peculiar to the Texano-Mexican region and Georgia and Florida, of which five species have been described.

1. **Schœnocaulon coulteri,** Baker in Journ. Linn. Soc. xvii. p. 477.

South Mexico, Zimapan (*Coulter*, 1569). Hb. Kew.

2. **Schœnocaulon drummondii,** A. Gr. in Hook. et Arn. Bot. Beech. Voy. p. 388, in nota; Baker in Journ. Linn. Soc. xvii. p. 477; S. Wats. in Proc. Am. Acad. xviii. p. 166.

Schœnocaulon texanum, Scheele in Linnæa, xxv. p. 262.

Texas.—North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 882, fide S. Watson).

3. **Schœnocaulon intermedium,** Baker in Journ. Linn. Soc. xvii. p. 477.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 882); South Mexico, Zimapan (*Coulter*, 1568, 1570). Hb. Kew.

Without any reference to Baker's *S. intermedium*, Watson identifies Parry and Palmer's 882 and Coulter's 1570 with *S. drummondii*. Possibly *S. intermedium* may not be a

distinct species, but the Kew specimen of Parry and Palmer's 882 is certainly the same as Coulter's 1570, the type of Baker's species.

4. **Schœnocaulon officinale,** A. Gr. in Benth. Pl. Hartw. pp. 29 et 96; Baker in Journ. Linn. Soc. xvii. p. 476; Bentley & Trimen, Med. Pl. t. 287.

Asagræa officinalis, Lindl. Bot. Reg. 1839, t. 33; Kunth, Enum. iv. p. 184.
Veratrum officinale, Ch. et Schl. in Linnæa, vi. p. 45; Heyne, Arzn. Gewächse, xiii. t. 27.
Helonias officinalis, D. Don in Edinb. New Phil. Journ. 1832, p. 234.
Asagræa caracasana, Ernst in Journ. Bot. 1871, p. 91, under "Proceedings of Societies."
Sabadilla officinarum, Brandt in Heyne's Arzn. Gewächse, xiii. sub t. 27.
Asagræa caricifolia, Kunth, Enum. iv. p. 666.
Veratrum caricifolium, Schl. Ind. Sem. Hort. Hal. 1838, p. 8.
Asagræa? tenuifolia, Kunth, Enum. iv. p. 700.
Veratrum tenuifolium, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 9).

South Mexico, near Orizaba (*Bourgeau*, 2282; *Botteri*, 1186), Mirador (*Liebmann*), Zimapan (*Linden*, 56), near Vera Cruz (*Galeotti*, 5586); Guatemala, in barrancas (*Hartweg*), without locality (*Skinner*).—Venezuela. Hb. Kew.

Order CXLVIII. PONTEDERIACEÆ.

Pontederiaceæ, Benth. et Hook. Gen. Plant. iii. p. 836; Solms-Laubach in DC. Monogr. Phanerog. iv. p. 501.

Bentham and Hooker retain four genera and estimate the number of species at scarcely thirty-five. In Solms-Laubach's monograph, which appeared very shortly after the last volume of the 'Genera Plantarum,' *Reussia*, referred to *Pontederia* by Bentham and Hooker, is regarded as a distinct genus; but the total number of species described is only twenty-one. They are widely dispersed in warm countries, though most numerous in America, extending northward to Eastern Canada.

1. PONTEDERIA.

Pontederia, Linn. Gen. Plant. n. 399; Benth. et Hook. Gen. Plant. iii. p. 837.

Solms distinguishes only two species of this genus and two of *Reussia*; all restricted to America, and those of *Reussia* to Brazil and Guiana.

1. **Pontederia cordata,** Linn. Sp. Pl. ed. 1, p. 288; Solms in DC. Monogr. Phanerog. iv. p. 532 (varietates); A. Gr. Man. Bot. Northern U. S. ed. 5, p. 545; Bot. Mag. t. 1156; Red. Lil. t. 72; Schnitzl. Iconogr. t. 52.

Pontederia lanceolata, Nutt. Gen. N. Am. Pl. i. p. 216; Kunth, Enum. iv. p. 126.

Eastern Canada southward.—Mexico, La Antigua and Jalapa, Vera Cruz (*Galeotti*, 5562; *Linden*, 54), Misantla (*Schiede & Deppe*), Oaxaca (*Jurgensen*); Nicaragua, San

Juan (*Friedrichsthal*).—Southward to PARAGUAY and URUGUAY, and in the WEST INDIES. Hb. Kew.

2. **Pontederia rotundifolia,** Linn. Suppl. p. 192; Solms in DC. Monogr. Phanerog. iv. p. 533 (varietates 2); Kunth, Enum. iv. p. 127.

Pontederia cordifolia, Mart. in Rœm. et Schult. Syst. Veg. vii. p. 1147; Kunth, Enum. iv. p. 126; Seub. in Mart. Fl. Bras. iii. 1, p. 95.

NICARAGUA, without locality (*Wright; Lévy*, 164).—Southward to PERU and BUENOS AYRES.

2. EICHORNIA.

Eichornia, Kunth, Enum. iv. p. 129; Benth. et Hook. Gen. Plant. iii. p. 838; Solms in DC. Monogr. Phanerog. iv. p. 525.

Solms enumerates five species, all of which are American, and one also occurs in Tropical Africa and Madagascar. In America the genus ranges from Nicaragua and the West Indies to Peru and Paraguay.

1. **Eichornia azurea,** Kunth, Enum. iv. p. 129; Solms in DC. Monogr. Phanerog. iv. p. 528; Abhandl. Naturf. Gesell., Halle, vi. p. 177, cum icone; Bot. Mag. t. 6487.

Pontederia azurea, Swartz, Fl. Ind. Occ. i. p. 609.

NICARAGUA, San Juan (*Friedrichsthal*), Greytown (*Tate*, 428); PANAMA, Barbacoas (*S. Hayes*).—Common nearly all over Tropical and Extratropical SOUTH AMERICA and the WEST INDIES. Hb. Kew.

3. HETERANTHERA.

Heteranthera, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 9, t. 2, et Fl. Peruv. et Chil. i. p. 43, t. 71; Benth. et Hook. Gen. Plant. iii. p. 838; Solms in DC. Monogr. Phanerog. iv. p. 516.

Species nine, covering the whole area of the order in America and Tropical Africa.

1. **Heteranthera graminea,** Vahl, Enum. ii. p. 45; Solms in DC. Monogr. Phanerog. iv. p. 517; Kunth, Enum. iv. p. 120.

Leptanthus gramineus, Michx. Fl. Bor.-Am. i. p. 25, t. 5. fig. 2; Hook. Exot. Fl. t. 94.

Schollera graminifolia, Willd. in Neue Schriften Gesell. Naturf. Freunde, Berlin, iii. p. 438; Torrey, Bot. U. S. & Mex. Bound. Surv. p. 223.

Schollera graminea, A. Gr. Man. Bot. Northern U. S. ed. 5, p. 545.

Commelina dubia, Jacq. Obs. iii. p. 9, t. 59.

CANADA and OREGON to TEXAS and CALIFORNIA.—NORTH MEXICO, near Matamoros in Tamaulipas (*Schott*).

2. **Heteranthera limosa,** Vahl, Enum. ii. p. 44; Solms in DC. Monogr. Phanerog. iv. p. 518; Griseb. Fl. Brit. W. Ind. p. 90; A. Gr. Man. Bot. Northern U. S.

ed. 5, p. 545; Benth. Pl. Hartw. p. 25; S. Wats. in Proc. Am. Acad. xviii. p. 166; Bot. Mag. t. 6192.

Pontederia limosa, Swartz, Fl. Ind. Occ. i. p. 611.

Heteranthera alismoides, Humb. et Bonpl. in Link Jahrb. iii. p. 73.

Leptanthus ovalis, Michx. Fl. Bor.-Am. i. p. 25, t. 5. fig. 1.

VIRGINIA and ILLINOIS southward.—NORTH MEXICO, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*), Morales (*Schaffner*); SOUTH MEXICO, Aguas Calientes (*Hartweg*), Vera Cruz to Orizaba (*Müller*, 457), Zacuapan, Vera Cruz (*Linden*, 55); NICARAGUA, without locality (*Lévy*).—COLOMBIA to PARAGUAY, and in the WEST INDIES. Hb. Kew.

3. **Heteranthera mexicana**, S. Wats. in Proc. Am. Acad. xviii. p. 166.

NORTH MEXICO, Juraz on the Sabinas River, Coahuila (*Palmer*, 1324). Hb. Kew.

4. **Heteranthera reniformis**, Ruiz et Pav. Fl. Peruv. et Chil. i. p. 43, t. 71; Solms in Monogr. Phanerog. iv. p. 519; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 545.

Heterandra reniforme, Beauv. in Trans. Am. Phil. Soc. iv. p. 173, cum icone.

Buchosia aquatica, Vel. Fl. Flum. i. t. 80.

Leptanthus reniformis, Michx. Fl. Bor.-Am. i. p. 24.

Heteranthera pubescens, Vahl, Enum. ii. p. 43, ex Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 11).

Heteranthera acuta, Vahl, l. c. p. 42.

NEW YORK and ILLINOIS southward.—GUATEMALA (*Friedrichsthal*); VENEZUELA to ARGENTINA.

β. **peduncularis**, Solms in DC. Monogr. Phanerog. iv. p. 520; Benth. Pl. Hartw. p. 25 (species).

Heteranthera reniformis, var. *multiflora*, Griseb. in Abhandl. K. Gesell. Wiss. Gœtt. xxiv. p. 323.

SOUTH MEXICO, Oaxaca (*Galeotti*, 5364), Orizaba (*Bourgeau*, 3284); GUATEMALA, Alta Vera Paz (*Türckheim*, 394), Izabal (*Bernoulli*, 901); NICARAGUA (*Tate*, 429); PANAMA, Chagres (*Fendler*, 294), near the city of Panama (*Seemann*, 329).—COLOMBIA to ARGENTINA. Hb. Kew.

[This is the position of the Philydraceæ, an order consisting of three genera and four species inhabiting Australia, Polynesia, and Eastern Asia; of the Xyrideæ, comprising two genera and between forty and fifty species, widely dispersed in the warmer regions, both of the Old World and America, and ranging in the latter country from New Jersey through the Eastern States to Florida and Georgia, the West Indies, and in South America from Venezuela and Guiana to Peru and Brazil, though hitherto no member of the order has been found within our limits; and of the Mayaceæ, an order of one genus, *Mayaca*, of which about seven species are known, one inhabiting North America, from North Carolina to Florida, another the West Indies, and the rest South America.]

Order CXLIX. COMMELINACEÆ.

Commelinaceæ, Benth. et Hook. Gen. Plant. iii. p. 844; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 115.

Of this order there are twenty-five genera and upwards of 300 species, which are widely dispersed in the warmer regions of both hemispheres; a few inhabit temperate regions in North America, Asia, Africa, and Australia, but the order is unrepresented in Europe.

1. ATHYROCARPUS.

Athyrocarpus, Schl. in Linnæa, xxvi. p. 454; Benth. et Hook. Gen. Plant. iii. p. 847.
Phæospherion, Hassk. in Flora, 1866, p. 212; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 135.

An exclusively Tropical-American genus, of four species.

1. **Athyrocarpus leiocarpus**, Benth. et Hook. Gen. Plant. iii. p. 847. (Tab. XCV. figg. 1–11.)

Phæospherion leiocarpum, Hassk. in Flora, 1866, p. 212; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 137.
Commelina? *leiocarpa*, Benth. Bot. Voy. 'Sulphur,' p. 176.
Commelina pallida, Schl. in Linnæa, xxvi. p. 454, non Willd.

South Mexico, San Blas to Tepic (*Coulter*, 1595), near Cordova (*Bourgeau*, 1480), region of Orizaba (*Botteri*, 522); Honduras, Tiger Island, Gulf of Fonesca (*Sinclair*). —Venezuela. Hb. Kew.

EXPLANATION OF TAB. XCV. Figg. 1–11.

Fig. 1, a branch of *Athyrocarpus leiocarpus* (*Phæospherion*), natural size; 2, raceme of flowers removed from an upper spathe; 3, one of the fertile stamens; 4, one of the sterile stamens; 5, pistil; 6, capsule (white, crustaceous, and shining); 7, horizontal section of the capsule; 8, vertical section of the capsule in a plane through the dorsal and one of the ventral cells; 9 and 10, seed from the dorsal cell seen from the side; 11, the same seed, showing the ventral hilum: all more or less enlarged.

2. **Athyrocarpus persicariæfolius**, Hemsley.

Phæospherion persicariæfolium, C. B. Clarke in DC. Monogr. Phanerog. iii. p. 137, t. 5. fig. 2.
Commelina persicariæfolia, DC. in Red. Lil. viii. t. 472; Griseb. Fl. Brit. W. Ind. p. 525.

Panama, Chagres (*Fendler*, 454).—Colombia to Peru, Guiana, Brazil, and in the West Indies. Hb. Kew.

2. COMMELINA.

Commelina, Linn. Gen. Plant. n. 62; Benth. et Hook. Gen. Plant. iii. p. 847.

This genus has about the same range as the whole order, and comprises about ninety species.

1. **Commelina acuminata,** H. B. K. Nov. Gen. et Sp. i. p. 258; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 152; Kunth, Enum. iv. p. 41.

South Mexico, San Blas to Tepic (*Sinclair*), Real del Monte (*Coulter*, 1598), without locality (*Ehrenberg; Uhde*), Santa Rosa de la Sierra (*Humboldt & Bonpland*); Guatemala, without locality (*Savage*). Hb. Kew.

2. **Commelina cœlestis,** Willd. Enum. Hort. Berol. i. p. 69; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 153; Sweet, Brit. Fl. Gard. t. 3.

Commelina tuberosa, Red. Lil. t. 108, non Linn.

Commelina intermedia, Schl. in Linnæa, xxiv. p. 655.

South Mexico, region of Orizaba (*Bourgeau*, 2583), Cordillera of Oaxaca (*Galeotti*, 4956), valley of Mexico (*Schaffner*, 491), without locality (*Bates; Graham*), Pedregal (*Bourgeau*, 422). Hb. Kew.

β. **bourgeaui,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 153.

South Mexico, Rio Blanco near Orizaba (*Bourgeau*, 3001). Hb. Kew.

3. **Commelina dianthifolia,** DC. in Red. Lil. vii. t. 390; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 151 ("var. *polyspatha*, Torr. U. S. & Mex. Bound. Surv. p. 224, est *C. dianthifolia*, DC. typ.," C. B. Clarke).

Commelina linearis, Benth. Pl. Hartw. p. 27.

New Mexico.—Mexico, Guadalupe near the city of Mexico (*Bourgeau*, 521), Aguas Calientes (*Hartweg*, 237), Zacatecas (*Coulter*, 1600). Hb. Kew.

4. **Commelina dubia,** DC. in Red. Lil. vi. t. 359; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 150.

Mexico? Cultivated specimens only in Kew herbarium.

5. **Commelina elliptica,** H. B. K. Nov. Gen. et Sp. i. p. 259; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 154.

Commelina scapigera, Kunth, Enum. iv. p. 46.

Commelina variabilis, Schl. Hort. Halens. Ic. p. 13, t. 7.

Commelina orchioides, Booth, in Bot. Reg. 1838, Misc. p. 53.

Commelina karwinskii, Mart. Hort. Monac. Seminif. 1839, ad calcem, ex Kunth, Enum. iv. p. 660.

South Mexico, Real del Monte at 8000 feet (*Coulter*, 1596; *Galeotti*, 4946), and numerous cultivated specimens. Hb. Kew.

6. **Commelina erecta,** Linn. Sp. Pl. ed. 1, p. 41; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 181.

North Carolina to Louisiana and Texas.—Mexico, Zimapan (*Coulter*, 1597).—Peru; North Brazil. Hb. Kew.

7. **Commelina graminifolia,** H. B. K. Nov. Gen. et Sp. i. p. 258; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 152; S. Wats. in Proc. Am. Acad. xviii. p. 166.

Commelina angustifolia, Reichb. Ic. Bot. Exot. ii. p. 17, t. 142, non Michx.

South Mexico, Santa Rosa de la Sierra and Los Joares at about 8000 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*, 1598, 1599, 1601). Hb. Kew.

β. **stricta,** C. B. Clarke, l. c.; Desf. Cat. Hort. Par. p. 388 (species); Reichb. Ic. Bot. Exot. ii. p. 17, t. 144.

South Mexico, without locality (*Graham*, 352; *Uhde*), San Nicolas, near the city of Mexico (*Bourgeau*, 1022, pro parte). Hb. Kew.

γ. **clandestina,** C. B. Clarke, l. c.; Kunth, Enum. iv. p. 46 (species).

Mexico? Cultivated specimens in Kew herbarium.

8. **Commelina leiandra,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 150, non Benth.

Tradescantia leiandra (errore *biandra*), Torr. Bot. U. S. & Mex. Bound. Surv. p. 224.

North Mexico, in mountains bordering on Texas (*Wright*, 700 partim). Hb. Kew.

S. Watson (Proc. Am. Acad. xviii. p. 167) states that the specimens in the Gray herbarium (Harvard) of Wright's 700 belong to *Commelina dianthifolia* and *Tradescantia leiandra*, Torr., which is a true *Tradescantia*.

9. **Commelina monticola,** Seub. in Mart. Fl. Bras. iii. 1, p. 264; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 162.

β. **vestita,** C. B. Clarke, l. c.; Seub. l. c. (species).

Costa Rica (*Hoffmann*).—Colombia to Peru and Brazil.

10. **Commelina pallida,** Willd. Hort. Berol. ii. p. 87, t. 87, non Schl.; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 151.

Commelina rubens, Red. Lil. vii. t. 367.

Commelina decumbens, E. Meyer in Presl, Reliq. Hænk. i. p. 136?

South Mexico, Zacoalco, near Guadalupe, valley of Mexico (*Bourgeau*, 648, 738), without locality (*Aschenborn*). Hb. Kew.

Var. **parviflora,** C. B. Clarke l. c. (Pavon MS., species, nec Link).

Mexico, without locality (*Pavon*; *Uhde*, 134).

11. **Commelina quitensis,** Benth. Pl. Hartw. p. 258; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 156.

γ. **cardiosepala,** C. B. Clarke, l. c.; Kunze in Linnæa, xx. p. 9 (species).

South Mexico, valley of Mexico (*Schmitz*), Chapultepec (*Bilimek*, 438); Costa Rica (*Hoffmann*). Hb. Kew.

The forms α and β are from Peru and Bolivia.

12. **Commelina rosea,** Schl. Ind. Sem. Hort. Halens. 1838, p. 7, et 1839, p. 9; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 193.

Mexico.

A doubtful plant; perhaps not a species of *Commelina*.

13. **Commelina scabra,** Benth. Pl. Hartw. p. 26; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 153.

Commelina ehrenbergiana, Otto in Link, Klotsch, & Otto Ic. Pl. Rar. Hort. Bot. Berol. p. 75, t. 30 (*C. scabra* in textu).

Commelina carnea, Schl. Ind. Sem. Hort. Halens. 1839, p. 9, adn.

SOUTH MEXICO, Aguas Calientes (*Hartweg*), near Regla (*Ehrenberg*), without locality (*Parkinson*). Hb. Kew.

14. **Commelina tuberosa,** Linn. Sp. Pl. ed. 1, p. 41; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 149; Andr. Bot. Rep. t. 399; Schnizl. Iconogr. t. 48.

Commelina parviflora, Reichb. Fl. Exot. ii. p. 17, t. 142, non Link.

Commelina undulata, Lodd. Bot. Cab. t. 1553, non R. Br.

SOUTH MEXICO, Pedregal and region of Orizaba (*Bourgeau,* 647, 649, 2806). Hb. Kew.

15. **Commelina virginica,** Linn. Sp. Pl. ed. 2, p. 61; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 182 (varietates α–ε); A. Gr. Man. Bot. Northern U. S. ed. 5, p. 546.

Commelina elegans, H. B. K. Nov. Gen. et Sp. i. p. 259; Seub. in Mart. Fl. Bras. iii. 1, p. 263, t. 37. fig. 2.

Commelina caripensis, H. B. K. Nov. Gen. et Sp. i. p. 260.

Commelina sulcata, Hoffmannsegg in Link, Jahrb. iii. p. 74, ex Rœm. et Schult. Syst. Veg. i. Mant. p. 94.

Commelina deficiens, Hook. Bot. Mag. 2644.

Commelina auriculata, E. Meyer in Presl, Reliq. Hænk. i. p. 137.

An exceedingly common species, ranging from NEW YORK, ILLINOIS, and MICHIGAN, southward through MEXICO, CENTRAL AMERICA, and the WEST INDIES to PARAGUAY and URUGUAY. Hb. Kew.

[The large and widely-spread genus *Aneilema* does not appear to be represented within our geographical limits.]

3. DICHORISANDRA.

Dichorisandra, Mikan, Del. Fl. et Faun. Bras. t. 3; Benth. et Hook. Gen. Plant. iii. p. 853; C. B. Clarke in Monogr. Phanerog. iii. p. 272.

This genus is restricted to America and chiefly to Brazil, ranging from Mexico to South Brazil. Twenty-eight species are described by Clarke.

1. **Dichorisandra aubletiana,** Rœm. et Schult. Syst. Veg. vii. p. 1181; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 273 (varietates α–ε).

Commelina hexandra, Aubl. Pl. Guian. i. p. 35, t. 12.

Tradescantia divaricata, Vahl, Eclog. Amer. i. p. 34.

ε. **persicariæfolia,** C. B. Clarke, l. c. p. 274.

COSTA RICA (*Hoffmann*).—COLOMBIA to NORTH BRAZIL.

As defined by Clarke the species has a very wide range in Tropical America, including the West Indies.

2. **Dichorisandra mexicana,** Presl, Reliq. Hænk. i. p. 140; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 284.

MEXICO (*Presl*).

3. **Dichorisandra ovalifolia,** Presl, Reliq. Hænk. i. p. 140; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 279.

NICARAGUA, near Granada (*Lévy*); PANAMA (*Presl*).—COLOMBIA.

4. TINANTIA.

Tinantia, Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1839, p. 365; Benth. et Hook. Gen. Plant. iii. p. 853.

An exclusively American genus of three species, the third inhabiting Venezuela and North Brazil.

1. **Tinantia anomala,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 287.

Tradescantia anomala, Torrey, Bot. U.S. & Mex. Bound. Surv. p. 287.

TEXAS.—MEXICO ?

It is not quite clear whether Clarke has seen Mexican specimens or whether he regarded Texas in a broad sense as belonging to Mexico.

2. **Tinantia fugax,** Scheidw. in Otto & Dietr. Allg. Gart. Zeit. 1839, p. 365; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 285 (varietates).

Tradescantia undulata, Vahl in Act. Soc. Hafn. ii. p. 27, t. 3.

Tradescantia bifida, Roth, Cat. Bot. i. p. 42.

Tradescantia commelina, Neuenh. in Rœm. Arch. i. 2, p. 24.

Tinantia undata, Schl. in Linnæa, xxv. p. 185; Bot. Reg. t. 1403.

Tradescantia erecta, Cav. Ic. Pl. i. p. 53, t. 74; Jacq. Collect. iv. p. 113, et Ic. Pl. Rar. ii. t. 354; Red. Lil. iv. t. 239; Bot. Mag. t. 1340.

Tradescantia umbellata, Vahl, Eclog. Amer. iii. p. 7, non Griseb. Fl. Brit. W. Ind. p. 524.

Tradescantia latifolia, Ruiz et Pav. Fl. Peruv. et Chil. iii. p. 44, t. 272 (anal. excepta); Lodd. Bot. Cab. t. 1300.

MISSISSIPPI; OHIO.—MEXICO, Zimapan (*Coulter*, 1609), near Orizaba (*Bourgeau*, 3000), Sierra San Pedro Nolasco &c. (*Jurgensen*, 679), Pedregal (*Bourgeau*, 890), without localities (*Halsted*; *Graham*, 351; *Bates*); GUATEMALA, Volcan de Fuego 8300 feet (*Salvin*).—Southward to PERU, BOLIVIA, and BRAZIL, and in the WEST INDIES. Hb. Kew. Introduced in Angola and North India.

5. TRADESCANTIA.

Tradescantia, Linn. Gen. Plant. n. 398; Benth. et Hook. Gen. Plant. iii. p. 853; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 287.

A genus of thirty-two species, restricted to America, and ranging from Canada to Buenos Ayres.

1. **Tradescantia amplexicaulis,** Klotzsch, ex C. B. Clarke in DC. Monogr. Phanerog. iii. p. 304.

Tradescantia multiflora, Kunth, Enum. iv. p. 96, pro parte, non Swartz.

South Mexico, Orizaba (*Botteri*, 531, 892), Vera Cruz to Orizaba (*Müller*, 1607), Chiapas (*Ghiesbreght*, 887); Guatemala, Volcan de Fuego at 7000 feet (*Salvin*). Hb. Kew.

2. **Tradescantia andrieuxii,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 291.

South Mexico, Tequisixtlan, between Oaxaca and Tehuantepec (*Andrieux*, 53). Hb. Kew.

3. **Tradescantia commelinoides,** Rœm. et Schult. Syst. Veg. vii. p. 1176; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 295. (Tab. XCVI. figg. 12–18.)

South Mexico, Orizaba (*Botteri*, 965), Sierra San Pedro Nolasco &c. (*Jurgensen*, 685), valley of Cordova (*Bourgeau*, 1872); Honduras (*Armstrong*). Hb. Kew.

EXPLANATION OF TAB. XCVI. Figg. 12–18.

Fig. 12, portion of a plant of *Tradescantia commelinoides*, natural size; 13, an expanded flower; 14 and 15, stamens; 16, a hair from the filament; 17, pistil; 18, a seed: all enlarged.

β. **rotundifolia,** C. B. Clarke, l. c. p. 296.

Costa Rica (*Hoffmann*): Panama (*Pavon*).

4. **Tradescantia crassifolia,** Cav. Ic. Pl. i. p. 54, t. 75; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 293; Salisb. Parad. Lond. t. 58; Bot. Mag. t. 1598.

Tradescantia herba-ratti, Nees in Linnæa, xix. p. 699.

Tradescantia lanuginosa, Hassk. Commel. Ind. p. 67.

North Mexico, Sierra Madre, Coahuila (*Palmer*, 2016), region of San Luis Potosi 6000 to 8000 (*Parry & Palmer*, 902); South Mexico, San Felipe (*Andrieux*, 52), Aguas Calientes (*Hartweg*, 236), Sierra San Pedro Nolasco &c. (*Jurgensen*, 701), Chiapas &c. (*Ghiesbreght*, 824), Zacatecas (*Coulter*, 1591), Pedregal (*Bourgeau*, 421). Hb. Kew.

β. **glabrata,** C. B. Clarke, in DC. Monogr. Phanerog. iii. p. 293.

Tradescantia speciosa, H. B. K. Nov. Gen. et Sp. i. p. 263, non Linn. Suppl.

Tradescantia humboldtiana, Rœm. et Schult. Syst. Veg. vii. p. 1172.

South Mexico, near Chapultepec at 6000 feet (*Humboldt & Bonpland*).

γ. **acaulis,** C. B. Clarke, l. c.; Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 4) (species).

Tradescantia iridescens, Lindl. Bot. Reg. 1838, Misc. p. 86, et 1840, t. 34; Schl. Hort. Hal. t. 11.

South Mexico, Cerro Ventosa, Real del Monte 7500 to 8000 feet (*Galeotti*, 4943), without locality (*Bates*). Hb. Kew.

5. **Tradescantia crassula,** Link et Otto, Ic. Pl. Rar. Hort. Berol. p. 13, t. 7; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 293; Bot. Mag. t. 2935; Lodd. Bot. Cab. t. 1560.

MEXICO, without locality (*Bates*).—BRAZIL. Hb. Kew.

This plant was cultivated on its first introduction, and it is probable that it was erroneously reported from Mexico, for the only localized specimens we have seen are from Brazil.

6. **Tradescantia cumanensis,** Kunth, Enum. iv. p. 96; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 306.

Commelina floribunda, H. B. K. Nov. Gen. et Sp. i. p. 260.

Descantaria, Schl. in Linnæa, xxvi. p. 140.

SOUTH MEXICO, Orizaba (*Bourgeau*, 2582); GUATEMALA, Chojoja, near Mazatenango (*Bernoulli*, 469); COSTA RICA (*Hoffmann*); PANAMA, Chagres (*Fendler*, 451), Empire station (*S. Hayes*, 318).—Southward to PERU. Hb. Kew.

β. **glabrior,** C. B. Clarke, l. c.

NICARAGUA, Chontales (*Tate*, 452).—ECUADOR. Hb. Kew.

7. **Tradescantia disgrega,** Kunth, Enum. iv. p. 305; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 305.

Tradescantia ehrenbergiana, Klotzsch et *Disgrega mexicana,* Hassk. ex C. B. Clarke, l. c.

SOUTH MEXICO, Orizaba (*Botteri*, 966), Guadalupe, valley of Mexico (*Bourgeau*, 888; *Bilimek*, 436), Real del Monte (*Coulter*, 1608); GUATEMALA (*Salvin*). Hb. Kew.

8. **Tradescantia elongata,** G. F. W. Meyer, Prim. Fl. Esseq. p. 146; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 303.

Tradescantia congesta, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 6).

SOUTH MEXICO, Mirador, Vera Cruz at 3000 feet (*Galeotti*, 4949); PANAMA, Empire station (*S. Hayes*, 319).—Southward to BUENOS AYRES. Hb. Kew.

β. **diuretica,** C. B. Clarke, l. c.; Mart. Reise Bras. i. p. 281 (species).

GUATEMALA (*Skinner*).—BRAZIL. Hb. Kew.

γ. **triandra,** C. B. Clarke, l. c. p. 304; Kunth, Enum. iv. p. 93 (species).

COLOMBIA.

δ. **schlechtendalii,** C. B. Clarke, l. c.; Kunth, l. c. p. 94 (species).

Tradescantia mexicana, Schl. in Linnæa, vi. p. 43.

Commelina mexicana, Meyer in Presl, Reliq. Hænk. i. p. 137?

SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*); PANAMA (*Hinds*). Hb. Kew.

9. **Tradescantia geniculata,** Jacq. Sel. Stirp. Am. p. 94, t. 64; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 300; Seub. in Mart. Fl. Bras. iii. 1, p. 251, t. 34.

Tradescantia floribunda, Kunth, Enum. iv. p. 89.
Tradescantia triflora, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 5).

South Mexico, Cordillera of Oaxaca at 4000 feet (*Galeotti*, 4948, 4954).—Widely spread in Tropical South America and the West Indies, and occurring in the Sandwich Islands.

β. **schiedeana,** C. B. Clarke, in DC. Monogr. Phanerog. iii. p. 301; Kunth, Enum. iv. p. 90 (species).

South Mexico, Real del Monte and Jalapa (*Coulter*, 1605), Jalapa (*Linden*, 5). Hb. Kew.

γ. **kunthiana,** C. B. Clarke, l. c.; Seub. in Mart. Fl. Bras. iii. 1, p. 252 (species).
Tradescantia decumbens, Klotzsch in Bot. Zeit. 1854, p. 316.

Panama, Chagres (*Fendler*, 453).—Venezuela to Brazil. Hb. Kew.

δ. **botterii,** C. B. Clarke, l. c.

South Mexico, Orizaba (*Botteri*, 960, 962). Hb. Kew.

10. **Tradescantia holosericea,** Kunth, Enum. iv. p. 92; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 302.
Tradescantia galeottiana, Kunth, l. c. p. 696.
Tradescantia floribunda, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 6).

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 481), San Felipe (*Andrieux*, 54), Cordillera of Oaxaca, 7000 to 8000 feet (*Galeotti*, 4952). Hb. Kew.

β. **dracænoides,** C. B. Clarke, l. c.
Dichorisandra longifolia, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 7).

South Mexico, Oaxaca (*Ghiesbreght*), Cerro de San Andres, Oaxaca 8000 to 9000 feet (*Galeotti*, 5585). Hb. Kew.

11. **Tradescantia karwinskyana,** Rœm. et Schult. Syst. Veg. vii. p. 1165; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 299; S. Wats. in Proc. Am. Acad. xviii. p. 166.

North Mexico, in the Sierra Madre, south of Saltillo, Coahuila (*Palmer*, 1325), San Luis Potosi (*Schaffner*, 525; *Parry & Palmer*, 900); South Mexico, between Vera Cruz and Orizaba (*Müller*, 1607), Zimapan (*Coulter*, 1604), near Orizaba (*Bourgeau*, 2667). Hb. Kew.

12. **Tradescantia laxiflora,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 307.

South Mexico, San Felipe (*Andrieux*, 51).

13. **Tradescantia leiandra,** Torr. Bot. U. S. & Mex. Bound. Surv. p. 225; S. Wats. in Proc. Am. Acad. xviii. p. 167.
Zebrina ? leiandra, C. B. Clarke in DC. Monogr. Phanerog. iii. p. 318.

New Mexico; Texas.—North Mexico, Soledad, Coahuila (*Palmer*, 2014). Hb. Kew.

14. **Tradescantia linearis,** Benth. Pl. Hartw. p. 27; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 298; S. Wats. in Proc. Am. Acad. xviii. p. 167.

New Mexico; Texas.—North Mexico, Rinconada (*Edwards*), region of San Luis Potosi 6000 to 8000 feet (*Palmer & Parry*, 901); South Mexico, without locality (*Graham*). Hb. Kew.

β. **graminifolia,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 299; Mart. et Gal. in Bull. Acad. Brux. ix. p. 377 (reprint, p. 5), species.

South Mexico, Jesus del Monte near Morelia (*Galeotti*, 4941). Hb. Kew.

15. **Tradescantia micrantha,** Torr. in Bot. U. S. & Mex. Bound. Surv. p. 224; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 309.

North Mexico, on the Lower Rio Grande (*Schott*).

This may have been collected on the Texas side of the river.

16. **Tradescantia minuta,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 307.

Mexico (*Uhde*). A sketch only in Kew Herbarium.

17. **Tradescantia nana,** Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 3); C. B. Clarke in DC. Monogr. Phanerog. iii. p. 308.

South Mexico, Cerro de San Felipe, north of Oaxaca at 8000 feet (*Galeotti*, 4953), near Oaxaca (*Sallé*). Hb. Kew.

18. **Tradescantia pulchella,** H. B. K. Nov. Gen. et Sp. i. p. 262, vii. t. 673; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 297.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 900); South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 420), Zimapan (*Coulter*, 1606), Real del Monte (*Coulter*, 1607), without locality (*Graham*, 354; *Bates*).—Colombia. Hb. Kew.

19. **Tradescantia velutina,** Kunth et Bouché, Ind. Sem. Hort. Berol. 1848, p. 12; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 292.

Guatemala (*Warscewicz*).

20. **Tradescantia venustula,** Kunth, Enum. Pl. iv. p. 87; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 298.

Tradescantia rhodantha, Torr. Bot. U. S. & Mex. Bound. Surv. p. 226.

North Mexico, near Chihuahua (*Potts*), Coralitas, Chihuahua (*Thurber*). Hb. Kew.

[The widely-spread *T. virginica*, Linn., is common on the border of Mexico in Texas, but we have seen no Mexican specimens.]

21. **Tradescantia warscewicziana,** Kunth et Bouché, Ind. Sem. Hort. Berol. 1847, Add. p. 11; C. B. Clarke in DC. Monogr. iii. p. 302; Bot. Mag. t. 5188.

Dichorisandra warscewicziana, Planch. Hort. Donat. p. 30.

Guatemala (ex *Kunth & Bouché*).

6. CALLISIA.

Callisia, Linn. in Loefl. Itin. p. 305, et Gen. Plant. n. 63; Benth. et Hook. Gen. Plant. iii. p. 854.

Four herbaceous species restricted to Tropical America, and ranging from Mexico and the West Indies to Bolivia and Brazil.

1. **Callisia insignis,** C. B. Clarke in Hemsl. Diag. Pl. Mex. iii. p. 56; DC. Monogr. Phanerog. iii. p. 311; S. Wats. in Proc. Am. Acad. xviii. p. 167. (Tab. XCV. figg. 12–21.)

North Mexico, near Morales, San Luis Potosi (*Schaffner*, 522); South Mexico, near Guadalupe, valley of Mexico (*Bourgeau*, 889). Hb. Kew.

DESCRIPTION OF TAB. XCV. Figg. 12–21.

Fig. 12, portion of a plant of *Callisia insignis,* natural size. 13, a flower; 14, a petal; 15, a stamen; 16, an ovary with the style; 17, a capsule; 18, horizontal section of a dehiscing capsule; 19, vertical section of capsule; 20, back view of a seed; 21, front view of a seed, the hilum short, linear, almost dot-like: all more or less enlarged.

2. **Callisia martensiana,** C. B. Clarke in DC. Monogr. Phanerog. iii. p. 312.

Tradescantia martensiana, Kunth, Enum. Pl. iv. p. 697; Bot. Mag. t. 4849.
Commelina multiflora, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 3).

South Mexico, valley of Cordova (*Bourgeau*, 2095), Jalapa at 3000 feet (*Galeotti*, 4964; *Linden*, 4), Orizaba (*Botteri*, 964); Guatemala (*Skinner*). Hb. Kew.

3. **Callisia repens,** Linn. Sp. Pl. ed. 2, p. 62; Griseb. Fl. Brit. W. Ind. p. 524; Lam. Ill. Pl. t. 35. fig. 1; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 310.

Hapalanthus repens, Jacq. Sel. Stirp. Am. p. 11, t. 11.
Tradescantia callisia, Swartz, Fl. Ind. Occ. i. p. 603.

South Mexico, Orizaba (*Botteri*, 537), Yucatan (*Schott*); Guatemala, cultivated ground (*Bernoulli*, 201).—Venezuela to Peru and Brazil, and in the West Indies. Hb. Kew.

4. **Callisia umbellulata,** Lam. Ill. Pl. i. p. 130, t. 35. fig. 2; Schl. in Linnæa, xxv. pp. 618–621; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 312.

Callisia morandra, Rœm. et Schult. Syst. Veg. vii. p. 1178 in adnot.
Callisia delicatula, Kunth, Enum. Pl. iv. p. 63; Mart. Fl. Bras. iii. 1, p. 257, t. 35.

South Mexico, Orizaba (*Botteri*, 967), near Cordova (*Bourgeau*, 1683); Nicaragua (*Tate*, 450).—Venezuela to Brazil and in the West Indies. Hb. Kew.

7. SPIRONEMA.

Spironema, Lindl. Bot. Reg. 1840, t. 47, et Misc. p. 26; Benth. et Hook. Gen. Plant. iii. p. 854.

A Mexican herbaceous monotype.

1. **Spironema fragrans,** Lindl. Bot. Reg. 1840, t. 47; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 313.

Spironema orthandrum, Lindberg in Act. Soc. Fennic. x. p. 127, t. 4.

South Mexico, valley of Cordova (*Bourgeau*, 2096). Hb. Kew.

8. CAMPELIA.

Campelia, L. C. Rich in Demoust. Bot. ou Anal. Fr. p. 46; Benth. et Hook. Gen. Plant. iii. p. 855.

This genus is also monotypic and herbaceous.

1. **Campelia zanonia,** H. B. K. Nov. Gen. et Sp. i. p. 264; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 314.

Campelia mexicana, Mart.; Kunth, Enum. Pl. p. 109; Regel, Gartenfl. 1875, t. 833.

South Mexico, Orizaba (*Botteri*, 917), valley of Cordova (*Bourgeau*, 2097); Nicaragua, Chontales (*Tate*, 333, 453); Panama, Empire railway-station (*S. Hayes*, 331).—Southward to Brazil and in the West Indies. Hb. Kew.

9. RHŒO.

Rhœo, Hance; Walp. Ann. iii. p. 659; Benth. et Hook. Gen. Plant. iii. p. 855.

1. **Rhœo discolor,** Hance in Walp. Ann. iii. p. 660; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 316 (errore *Rhæo*).

Tradescantia discolor, L'Hérit. Sert. Angl. p. 8, t. 12; Smith, Ic. Pict. Pl. Rar. t. 10; Bot. Mag. tt. 1192 et 5079; Redouté, Lil. iii. t. 168; Refug. Bot. t. 48; Flore des Serres, t. 1169–70.

Tradescantia spathacea, Swartz, Prodr. Fl. Ind. Occ. p. 57.

Ephemerum bicolor, Mœnch. Hort. Marb. Suppl. p. 78.

Mexico (ex *Kunth*).—West Indies. No Mexican specimens in Kew Herbarium, and most of them from cultivated plants.

It is commonly cultivated in warm countries, and has become wild in some places in the Old World.

10. LEPTORHŒO.

Leptorhœo, C. B. Clarke in Hemsl. Diag. Pl. Nov. (April 1880) p. 55, et in DC. Monogr. Phanerog. iii. p. 317; Benth. et Hook. Gen. Plant. iii. p. 856.

An herbaceous monotype.

1. **Leptorhœo filiformis,** C. B. Clarke in Hemsl. Diag. Pl. Nov. (April 1880) p. 55, et in DC. Monogr. Phanerog. iii. p. 317. (Tab. XCVI. figg. 1–11.)

Tradescantia filiformis, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 5).

Aneilema floribundum, Hook. et Arn. Bot. Beech. Voy. p. 311.

South Mexico, Cordillera of Oaxaca (*Galeotti*, 4957); Nicaragua, island of Omotepé (*Lévy*, 202), without locality (*Tate*, 11, 451); Panama (*Seemann*, 278).—Venezuela to Brazil. Hb. Kew.

By some slip Clarke attributes to us the species of this genus, though we had previously published it as his, with his diagnosis; and Bentham and Hooker erroneously cite us as the authority for the genus.

EXPLANATION OF TAB. XCVI. Figg. 1–11.

Fig. 1, portion of a plant of *Leptorhœo filiformis*, natural size. 2, a flower-bud; 3, an expanded flower; 4 and 5, stamens; 6, pistil; 7, capsule; 8, vertical section of the same; 9, cross section; 10, dorsal view of a seed; 11, ventral view of the same: all enlarged.

11. ZEBRINA.

Zebrina, Schnizl. in Bot. Zeit. 1849, p. 870; Benth. et Hook. Gen. Plant. iii. p. 856.

Apparently monotypic, for although Clarke doubtfully proposes a second species founded on *Tradescantia leiandra*, var. *brevifolia*, Torrey (Bot. U. S. & Mex. Bound. Surv. p. 225), S. Watson asserts (Proc. Am. Acad. xviii. p. 167) that the plant in question is a genuine *Tradescantia*.

1. **Zebrina pendula,** Schnizl. in Bot. Zeit. 1849, p. 870; Dcne. in Revue Horticole, 1855, p. 141, t. 8; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 318.
Cyanotis vittata, Lindl. in Journ. Hort. Soc. Lond. v. p. 139.
Cyanotis zebrina, Nees in Delect. Sem. Hort. Vratislav. 1850.
SOUTH MEXICO, Orizaba (*Bourgeau*, 2854). Hb. Kew.

12. WELDENIA.

Weldenia, Schultes f. in Flora, 1829, p. 3, t. 1A; Benth. et Hook. Gen. Plant. iii. p. 856.

An herbaceous monotype.

1. **Weldenia candida,** Schultes f. in Flora, 1829, p. 3, t. 1A; C. B. Clarke in DC. Monogr. Phanerog. iii. p. 319.
Weldenia schultesii, Schl. Hort. Hal. p. 14.
Lampra volcanica, Benth. Pl. Hartw. p. 95; Hook. Ic. Pl. xiii. p. 28, t. 1236.
SOUTH MEXICO, between Chico and Real del Monte (*Ehrenberg*), Nevado de Toluca (*Karwinski*), Cuesta de Catinga (*Schiede*); GUATEMALA, Volcan de Agua at 14,000 feet (*Hartweg*). Hb. Kew.

[The RAPATEACEÆ are a small order comprising six genera and about twenty species, restricted to Tropical America and ranging from Brazil to the border of Venezuela; and the FLAGELLARIEÆ are a small order of three genera and about eight species, natives of the warmer parts of the Old World.]

Order CL. JUNCACEÆ.

Juncaceæ, Benth. et Hook. Gen. Plant. iii. p. 861.

Including the peculiarly Australian tribes Xeroteæ and Calectasieæ, this order numbers fourteen genera and about 200 species.

1. JUNCUS.

Juncus, Linn. Gen. Plant. n. 437, pro parte; Benth. et Hook. Gen. Plant. iii. p. 867.

Nearly 200 species have been described, but many of them are spurious, and Bentham and Hooker estimate that there is probably not more than half that number of distinct

species. The genus is very commonly represented in nearly all temperate and frigid regions; it is also found within the tropics, and some of the species are generally dispersed.

1. **Juncus acuminatus,** Michx. Fl. Bor.-Am. i. p. 192; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 462 (varietates plures); Buchenau, Krit. Verzeichn. Junc. p. 2; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 169; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 541.

Juncus radicans, Schl. in Linnæa, xviii. p. 442, fide Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 343, et Krit. Verzeichn. Junc. p. 38.

Juncus debilis, A. Gr. Man. Bot. Northern U.S. ed. 2, 1856, p. 480.

New Jersey southward.—North Mexico, Sonora (*Schott*), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 893, 895); South Mexico, Vera Cruz to Orizaba (*Müller*, 1955), Jalapa (*Linden*, 84, 86), without locality (*Bates*). Hb. Kew.

2. **Juncus balticus,** Willd. Berl. Magaz. 1809, iii. p. 298; Buchenau, Krit. Verzeichn. Junc. pp. 7 et 61; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 462, pro parte; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 167.

New England southward and westward.—North Mexico, Sonora (*Wright*), San Luis Potosi (*Schaffner*); South Mexico, Tacubaya (*Bourgeau*, 207).—Northern Europe. Hb. Kew.

3. **Juncus brevifolius,** Liebm. in Vidensk. Meddel. 1850, p. 40; Steud. Syn. Pl. Glum. ii. p. 298; Buchenau, Krit. Verzeichn. p. 8, et in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 340.

South Mexico, Chinantla, Puèbla at 7000 feet (*Liebmann*). Hb. Kew.

4. **Juncus bufonius,** Linn. Sp. Pl. ed. 1, p. 328; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 451; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 168.

North Mexico, Sonora (*Thurber*), San Luis Potosi (*Schaffner*, 556; *Parry & Palmer*, 896).

Very widely dispersed, though often existing only as a colonist.

5. **Juncus effusus,** Linn. Sp. Pl. ed. 1, p. 326; Engelm. in Trans. Acad. Sc. St. Louis, ii. pp. 443 et 491; Buchenau, Krit. Verzeichn. pp. 17 et 96; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 537.

Juncus communis, E. Mey. Junci Gen. Monogr. Specim. 1819, p. 20.

Juncus conglomeratus, Linn. Sp. Pl. ed. 1, p. 326.

Mexico, Misantla and Chinantla (*Liebmann*), region of Orizaba (*Bourgeau*, 2592), near Regla at 6500 feet (*Galeotti*, 5817), Vera Cruz to Orizaba (*Müller*, 1953). Hb. Kew.

This species is almost ubiquitous.

6. **Juncus marginatus,** Rostk. Diss. de Junco, 1801, p. 38; Buchenau, Krit. Verzeichn. Junc. p. 28; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 455 (varietates); S. Wats. in Proc. Am. Acad. xviii. p. 169; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 539.

Juncus canaliculatus, Liebm. in Vidensk. Meddel. 1850, p. 43; Steud. Syn. Pl. Glum. ii. p. 304; Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 343, et Krit. Verzeichn. Junc. p. 11.

NEW ENGLAND to ILLINOIS and southward.—NORTH MEXICO, Sierra Madre (*Seemann*), San Luis Potosi (*Parry & Palmer*, 893, 895; *Schaffner*, 552, 553). Hb. Kew.

7. **Juncus mexicanus,** Willd. in Rœm. et Schult. Syst. Veg. vii. 1, p. 178; Buchenau, Krit. Verzeichn. p. 30, et in Abhandl. Naturw. Ver. Bremen, vi. pp. 363 et 386.

Juncus compressus, H. B. K. Nov. Gen. et Sp. i. p. 235.

Juncus complanatus, J. A. et J. H. Schultes in Rœm. et Schult. Syst. Veg. vii. 1, p. 185.

Juncus orizabæ, Liebm. in Vidensk. Meddel. 1850, p. 39; Steud. Syn. Pl. Glum. ii. p. 297.

SOUTH MEXICO, Volcan de Orizaba at 12,000 feet (*Liebmann*), near Chapultepec, San Augustin de las Cuevas and Real del Monte at 7200 to 8250 feet (*Humboldt & Bonpland*).—Also in CHILI, according to Buchenau.

8. **Juncus nodosus,** Linn. Sp. Pl. ed. 2, p. 466; Buchenau, Krit. Verzeichn. Junc. p. 33; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 471 (varietates); S. Wats. in Proc. Am. Acad. xviii. p. 168.

CANADA southward.—NORTH MEXICO, San Luis Potosi (*Schaffner*, 551). Hb. Kew.

Engelmann (*l. c.*) states that this species ranges all over North America, except the south-eastern States and Mexico, but it has since been found in the latter country.

9. **Juncus tenuis,** Willd.; Buchenau, Krit. Verzeichn. Junc. p. 45, et in Abhandl. Naturw. Ver. Bremen, vi. p. 381; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 450; S. Wats. in Proc. Am. Acad. Sc. xviii. p. 168; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 540.

NEW ENGLAND southward.—NORTH MEXICO, San Luis Potosi (*Parry & Palmer*, 894; *Schaffner*, 555); SOUTH MEXICO, Talea, Chinantla, and Hacienda de Castresana, 7500 feet (*Liebmann*).—Also widely spread in SOUTH AMERICA as well as EUROPE. Hb. Kew.

10. **Juncus trinervis,** Liebm. in Vidensk. Meddel. 1850, p. 40; Buchenau in Krit. Verzeichn. Junc. pp. 47 et 86; Steud. Syn. Pl. Glum. ii. p. 298.

Juncus ebracteatus, E. Mey. Syn. Junc. 1822, p. 28, fide Buchenau, loc. cit.

SOUTH MEXICO, Real del Monte (*Coulter*, 1584), Hacienda de Castresana, 7500 feet (*Liebmann*). Hb. Kew.

11. **Juncus xiphioides,** E. Mey. Syn. Junc. 1822, p. 50; Buchenau, Krit. Verzeichn. Junc. pp. 48 et 74; Engelm. in Trans. Acad. Sc. St. Louis, ii. p. 481; S. Wats. in Proc. Am. Acad. xviii. p. 169.

CANADA southward.—NORTH MEXICO, Morales (*Schaffner*, 549), region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 897). Hb. Kew.

2. LUZULA.

Luzula, DC. Fl. Franç. iii. p. 158; Benth. et Hook. Gen. Pl. iii. p. 868; Buchenau, Krit. Verzeichn. Junc.

Upwards of fifty species have been proposed; but Bentham and Hooker estimate the number at about twenty-six. Buchenau, however, while reducing a great many, retains considerably more than half of them.

1. **Luzula caricina,** E. Mey. in Linnæa, xxii. p. 418; Steud. Syn. Pl. Glum. ii. p. 294; Buchenau, Krit. Verzeichn. Junc. p. 52.

Luzula barbata, Liebm. in Vidensk. Meddel. 1850, p. 45; Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 345.

South Mexico, Chinantla, Puebla 7000 to 8000 feet (*Liebmann*), Cordillera of Oaxaca at 8000 feet (*Galeotti*, 5757), Volcan de Orizaba at 10,000 feet (*Liebmann*). Hb. Kew.

2. **Luzula denticulata,** Liebm. in Vidensk. Meddel. 1850, p. 46; Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 343, et Krit. Verzeichn. Junc. p. 53.

South Mexico, Vaqueria del Jacale, peak of Orizaba 10,000 feet (*Liebmann*). Hb. Kew.

3. **Luzula gigantea,** Desv. in Journ. de Bot. Par. 1808, i. p. 145; Steud. Syn. Pl. Glum. ii. p. 291; H. B. K. Nov. Gen. et Sp. viii. t. 697.

Luzula lætevirens, Liebm., et *L. latifolia,* Liebm. in Vidensk. Meddel. 1850, pp. 46 et 47; Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 347, et 1879, vi. p. 413, et Krit. Verzeichn. Junc. p. 55.

South Mexico, Volcan de Orizaba at 10,000 feet, and Cumbre de Ixtepec, Oaxaca, 10,000 feet (*Liebmann*); Guatemala, without locality (*Godman & Salvin*).—Colombia and Ecuador. Hb. Kew.

4. **Luzula racemosa,** Desv. in Journ. de Bot. Par. 1808, i. p. 162, t. 6. fig. 1; Steud. Syn. Pl. Glum. ii. p. 294; Buchenau in Abhandl. Naturw. Ver. Bremen, 1873, iii. p. 344, et iv. p. 129, et 1879, vi. p. 415, t. 4.

Luzula vulcanica, Liebm. in Vidensk. Meddel. 1850, p. 44.

Luzula spicata, DC., γ. *interrupta,* Schl. in Linnæa, xxii. p. 415.

Luzula interrupta, Desv. in Journ. de Bot. Par. 1808, i. p. 163.

South Mexico, peak of Orizaba 10,000 to 14,000 feet (*Liebmann*; *Linden*, 92; *Galeotti*, 5765); Guatemala, north peak, Volcan de Fuego (*Godman & Salvin*, 254).—Colombia to Chili. Hb. Kew.

Order CLI. PALMÆ.

Palmæ, Benth. et Hook. Gen. Plant. iii. p. 870.

About 140 genera, comprising some 1100 species, a very large proportion of which are still very imperfectly known. They are spread all over the tropics; much less common in subtropical regions, and only a few solitary outliers occur in temperate regions.

1. EUTERPE.

Euterpe, Gærtn. Fruct. i. p. 24 (excl. citat. Rumphii), t. 9. fig. 3; Benth. et Hook. Gen. Plant. iii p. 896.

About eight species are known; they inhabit Tropical America and the West Indies.

1. **Euterpe leucospadix,** Wendl. ined.?

GUATEMALA, near Yzabal (*Wendland*). Hb. Kew.

2. **Euterpe longepetiolata,** Œrst. in Vidensk. Meddel. 1858, p. 32.

COSTA RICA, eastern declivity of the Cordillera, in the neighbourhood of Turrialba, at an altitude of 3000 feet (*Œrsted*).

3. **Euterpe macrospadix,** Œrst. in Vidensk. Meddel. 1858, p. 31.

NICARAGUA, in the primeval forests on the banks of the San Juan, near Sarapiqui (*Œrsted*).

2. OREODOXA.

Oreodoxa, Willd. in Mem. Acad. Berl. 1804, p. 34; Benth. et Hook. Gen. Plant. iii. p. 899.

A wholly Tropical-American genus of five described species.

1. **Oreodoxa regia,** H. B. K. Nov. Gen. et Sp. i. p. 305; Mart. Hist. Nat. Palm. iii. p. 168, t. 156; Kunth, Enum. Pl. iii. p. 182; Griseb. Fl. Brit. W. Ind. p. 517; Seem. Bot. Voy. 'Herald,' p. 203.

PANAMA, common about Cruces, Gorgona, and San Juan (*Seemann*).—CUBA, ANTIGUA, and other West-Indian Islands.

3. SOCRATEA.

Socratea, Karst. in Linnæa, xxviii. p. 263; Benth. et Hook. Gen. Plant. iii. p. 900.

Three or five species, according to different authors, inhabiting Brazil, Colombia, and Central America.

1. **Socratea exorrhiza,** Wendl. in De Kerch. les Palmiers, p. 257.

Iriartea exorrhiza, Mart. Hist. Nat. Palm. ii. p. 36, tt. 33 et 34; Kunth, Enum. Pl. iii. p. 194; Seem. Bot. Voy. 'Herald,' p. 203.

PANAMA, in woods (*Seemann*).—COLOMBIA to BRAZIL.

2. **Socratea durissima,** Wendl. in De Kerch. les Palmiers, p. 257.

Iriartea durissima, Œrst. in Vidensk. Meddel. 1858, p. 30.

NICARAGUA, in the primeval forests on the banks of the San Juan (*Œrsted*).

4. WETTINIA.

Wettinia, Pœpp. in Endl. Gen. Plant. p. 243; Pœpp. et Endl. Nov. Gen. et Sp. ii. p. 39, tt. 153, 154; Benth. et Hook. Gen. Plant. iii. p. 902.

Besides the following doubtful species, there is one, or perhaps two, species in the Andes of Peru.

1. **Wettinia,** sp.?, Benth. et Hook. Gen. Pl. iii. p. 902.

Panama (*Seemann*). Hb. Kew.

5. MALORTIEA.

Malortiea, Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 25; Benth. et Hook. Gen. Plant. iii. p. 906.

This genus is limited to Central America; and Bentham and Hooker record the number of species as five, which was probably a slip for three.

1. **Malortiea gracilis,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 26; Bot. Mag. t. 5291.

Guatemala (*Wendland*). Cultivated specimens in the Kew Herbarium.

A specimen in the Kew Herbarium from Chontales, Nicaragua (*Tate*, 380), is perhaps the same species.

2. **Malortiea latisecta,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 144.

Costa Rica, near Sarapiqui (*Wendland*).

A specimen in the Kew Herbarium, labelled *Malortiea intermedia* in the handwriting of Wendland himself, is probably this species.

3. **Malortiea simplex,** Wendl. in Bot. Zeit. 1859, p. 5; Bot. Mag. t. 5247.

Nicaragua, Chontales (*Seemann*, 161); Costa Rica, on the eastern side (*Friedrichsthal*). Hb. Kew.

6. REINHARDTIA.

Reinhardtia, Liebm. in Overs. K. Dansk. Selsk. 1846, p. 9 (nomen tantum); Mart. Hist. Nat. Palm. iii. p. 311; Benth. et Hook. Gen. Plant. iii. p. 906.

An exclusively Mexican genus, of which we have seen only one species.

1. **Reinhardtia elegans,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 311; Walp. Ann. iii. p. 459.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 760), Cumbre de Teotalcingo, Oaxaca (*Liebmann*). Hb. Kew.

In the Kew Herbarium there is a specimen of this palm bearing a different specific name, in the handwriting of Liebmann, from the one he subsequently published. In the 'Genera Plantarum' the specimens are treated as belonging to three species.

7. CHAMÆDOREA.

Chamædorea, Willd. Sp. Pl. iv. p. 638; Benth. et Hook. Gen. Plant. iii. p. 910; Drude in Mart. Fl. Bras. iii. 2, p. 528.

Nunnezharia, Ruiz et Pav. Prodr. Fl. Peruv. et Chil. p. 147, t. 31.

Nunnezia, Willd. Sp. Pl. iv. p. 1154.

A genus peculiar to America, comprising some sixty species, ranging from Mexico to Peru, but most numerous in Mexico and Central America.

1. **Chamædorea affinis,** Liebm. in Mart. Nat. Hist. Palm. iii. p. 308; Walp. Ann. iii. p. 457.

Chamædorea (*Chamædoropsis*) *affinis,* Œrst. in Vidensk. Meddel. 1858, p. 17.

South Mexico, Chinantla (*Liebmann*), Monte de Tepitonga and Tonaguia, Comaltepec (*Jurgensen*, 535). Hb. Kew.

2. **Chamædorea (Stephanostachys) alternans,** Wendl. in Regel's Gartenflora, 1880, p. 104.

South Mexico, Chiapas, imported and cultivated by Mr. Linden of Ghent.

3. **Chamædorea arenbergiana,** Wendl. fide Œrsted in Vidensk. Meddel. 1858, p. 30, et Benth. et Hook. Gen. Plant. iii. p. 911.

Spathoscaphe arenbergiana, Œrst. l. c., et L'Amérique Centrale, p. 15, t. 7. figg. 29–37.

Central America. Cultivated specimens only in the Kew Herbarium.

4. **Chamædorea (Euchamædorea?) bifurcata,** Œrst. in Vidensk. Meddel. 1858, p. 13.

Costa Rica, Aguacate (*Œrsted*).

5. **Chamædorea (Chamædorella) brachyclada,** Wendl. in Regel's Gartenflora, 1880, p. 101.

Panama, Chiriqui (*Zahn*).

6. **Chamædorea (Euchamædorea) bracteata,** Wendl. in Bot. Zeit. 1859, p. 29.

Central America? Cultivated in European gardens, and believed to be one of Warscewicz's introductions.

7. **Chamædorea (Stephanostachys) casperiana,** Klotsch in Otto & Dietr. Allg. Gart. Zeit. 1852, xx. p. 363.

Stephanostachys casperiana, Œrst. L'Amérique Centrale, p. 14, t. 7. figg. 1–11.

Guatemala (*Warscewicz*). Cultivated specimens in the Kew Herbarium.

Described from a plant that flowered in the garden of Dr. Casper at Berlin.

8. **Chamædorea (Stachyophorbe) cataractarum,** Mart. Hist. Nat. Palm. iii. p. 309; Benth. et Hook. Gen. Pl. iii. p. 910.

Stachyophorbe cataractarum, Liebm. in Overs. K. Dansk. Vidensk. Selsk. 1846, p. 8; Œrst. in Vidensk. Meddel. 1858, p. 9.

South Mexico, cataracts of Chinantla at 1200 to 1500 feet (*Liebmann*); San Pedro Nolasco &c. (*Jurgensen*). Hb. Kew.

9. **Chamædorea (Chamædoropsis) costaricana,** Œrst. in Vidensk. Meddel. 1858, p. 19.

Costa Rica, in the woods at Turrialva (*Œrsted*).

10. **Chamædorea (Stachyophorbe) deckeriana,** Klotzsch in Otto & Dietr. Allg. Gart. Zeit. 1852, xx. p. 364.

Dasystachys deckeriana, Œrst. in Vidensk. Meddel. 1858, p. 26, et L'Amérique Centrale, p. 14, t. 6.

GUATEMALA. Cultivated from seeds sent to Europe by Warscewicz.

11. **Chamædorea (Chamædoropsis) desmoncoides,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 177; Œrst. in Vidensk. Meddel. 1858, p. 17.

MEXICO?

12. **Chamædorea (Chamædoropsis) elatior,** Mart. in Linnæa, v. p. 205, et Hist. Nat. Palm. iii. p. 157, pro parte, fide Œrst. in Vidensk. Meddel. 1858, p. 16.

Chamædorea (*Euchamædorea*) *elatior,* Mart.; Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 170.

Chamædorea scandens, Liebm.; Mart. Hist. Nat. Palm. iii. p. 308, fide Œrst. l. c.

SOUTH MEXICO, Barranca de Tioselo (*Schiede*), Mirador (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen,* 948). Hb. Kew.

13. **Chamædorea elegans,** Mart. in Linnæa, v. p. 204, et Hist. Nat. Palm. iii. p. 159, t. R. fig. 3.

Collinia elegans, Liebm. in Overs. K. Dansk. Vidensk. Selsk. 1846, p. 8; Œrst. in Vidensk. Meddel. 1858, p. 6.

SOUTH MEXICO, Mirador (*Liebmann*), Barranca de Tioselo (*Schiede*), Sierra San Pedro Nolasco &c. (*Jurgensen,* 967).

14. **Chamædorea (Eleutheropetalum) ernesti-augusti,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1852, xx. p. 73; Bot. Mag. t. 4831 (fœm.), t. 4837 (mas); Œrst. L'Amérique Centrale, p. 13, t. 3. figg. 7–30.

Morenia ernesti-augusti, Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 3.

Eleutheropetalum ernesti-augusti, Œrst. in Vidensk. Meddel. 1858, p. 7.

SOUTH MEXICO, Tabasco (*Linden*), without special locality (*Liebmann*). Hb. Kew.

15. **Chamædorea (Psilostachys) geonomæformis,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1852, xx. p. 1; Œrst. in Vidensk. Meddel. 1858, p. 24, et L'Amérique Centrale, p. 14, t. 5. figg. 1–16.

Nunnezharia geonomæformis, Hook. f. Bot. Mag. t. 6088.

GUATEMALA (*Warscewicz*). Cultivated specimens in the Kew Herbarium.

16. **Chamædorea glaucifolia,** Wendl. ined.?

SOUTH MEXICO, Chiapas. Cultivated specimens only in the Kew Herbarium.

17. **Chamædorea (Chamædoropsis) graminifolia,** Wendl. Ind. Palm. p. 62; Œrst. in Vidensk. Meddel. 1858, p. 18.

GUATEMALA?

18. **Chamædorea (Collinia) humilis,** Mart. Hist. Nat. Palm. iii. p. 308.

Collinia humilis, Liebm. in Overs. K. Dansk. Vidensk. Selsk. 1846, p. 8; Œrst. in Vidensk. Meddel. 1858, p. 6.

SOUTH MEXICO, Colipa, Misantla, Tonaguia, &c., at 1500 to 3000 feet (*Liebmann*), Sierra San Pedro Nolasco (*Jurgensen*, 631). Hb. Kew.

19. **Chamædorea (Chamædoropsis) karwinskiana,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 179; Œrst. in Vidensk. Meddel. 1858, p. 18.

Chamædorea elatior, Mart. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 179, et Hist. Nat. Palm. iii. p. 157, pro parte, fide Œrst. l. c.

MEXICO.

20. **Chamædorea klotzschiana,** Wendl. Ind. Palm. p. 63; Œrst. in Vidensk. Meddel. 1858, p. 21.

MEXICO.

21. **Chamædorea (Collinia) liebmannii,** Mart. Hist. Nat. Palm. iii. p. 308; Walp. Ann. iii. p. 457.

Collinia elatior, Liebm. in Overs. K. Dansk. Vidensk. Selsk. 1846, p. 8; Œrst. in Vidensk. Meddel. 1858, p. 6.

SOUTH MEXICO, Chinantla (*Liebmann*).

22. **Chamædorea (Chamædorella) lepidota,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 138; Œrst. in Vidensk. Meddel. 1858, p. 23.

MEXICO?

Wendland states that Galeotti, from whom he procured a living plant, informed him that he imported it from Mexico, while Linden of Ghent asserted that he received it from New Grenada.

23. **Chamædorea (Chamædoropsis) lindeniana,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 139; Œrst. in Vidensk. Meddel. 1858, p. 21.

MEXICO.

24. **Chamædorea (Chamædoropsis) lunata,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 307; Walp. Ann. iii. p. 456; Œrst. in Vidensk. Meddel. 1858, p. 21.

SOUTH MEXICO, Jicaltepec, on the Rio Nautla (*Liebmann*). Hb. Kew.

25. **Chamædorea (Chamædoropsis?) macrospadix,** Œrst. in Vidensk. Meddel. 1858, p. 20.

COSTA RICA, Turrialba at 3000 to 4000 feet (*Œrsted*).

26. **Chamædorea (Stephanostachys) martiana,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 137.

Stephanostachys martiana, Œrst. in Vidensk. Meddel. 1858, p. 29.

MEXICO.

27. **Chamædorea (Chamædoropsis) membranacea,** Œrst. in Vidensk. Meddel. 1858, p. 22.

NICARAGUA, mountains of Pantasma, in the province of Segovia (*Œrsted*).

28. **Chamædorea (Chamædorella) microphylla,** Wendl. in Bot. Zeit. 1859, p. 102.

Panama, Volcan de Chiriqui (*Warscewicz*). Cultivated specimens in the Kew Herbarium.

29. **Chamædorea (Stachyophorbe) montana,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 308; Walp. Ann. iii. p. 457; Œrst. in Vidensk. Meddel. 1858, p. 19, et L'Amérique Centrale, p. 14, t. 4. fig. 17.

South Mexico, Trapiche de la Concepcion, Oaxaca (*Liebmann*). Hb. Kew.

30. **Chamædorea (Stachyophorbe) oreophila,** Mart. Hist. Nat. Palm. iii. p. 309; Walp. Ann. iii. p. 458.

Stachyophorbe montana, Liebm.; Œrst. in Vidensk. Meddel. 1858, p. 10.

South Mexico, Tepitonga (*Liebmann*).

31. **Chamædorea (Euchamædorea) pacaya,** Œrst. in Vidensk. Meddel. 1858, p. 12.

Costa Rica, Volcan de Jaris at about 3000 feet (*Œrsted*).

32. **Chamædorea (Chamædoropsis) paradoxa,** Wendl. in Bot. Zeit. 1859, p. 29.

Mexico?

33. **Chamædorea (Chamædoropsis) pochutlensis,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 308; Walp. Ann. iii. p. 457; Œrst. in Vidensk. Meddel. 1858, p. 18.

South Mexico, Pochutla (*Liebmann*).

34. **Chamædorea pygmæa,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1852, xx. pp. 217 et 249.

Stachyophorbe pygmæa, Œrst. in Vidensk. Meddel. 1858, p. 10, et L'Amérique Centrale, p. 14, t. 4.

South Mexico, Chiapas.

35. **Chamædorea (Chamædoropsis) radicalis,** Mart. Hist. Nat. Palm. iii. p. 308; Walp. Ann. iii. p. 457; Œrst. in Vidensk. Meddel. 1858, p. 20.

South Mexico, Sierra Madre, 21° to 22° N. lat. (*Karwinski*).

36. **Chamædorea (Chamædoropsis) resinifera,** Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 179; Œrst. in Vidensk. Meddel. 1858, p. 17.

South Mexico.

37. **Chamædorea sartorii,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 308; Walp. Ann. iii. p. 457.

Morenia oblongata, Wendl. in Otto & Dietr. Allg. Gart. Zeit. 1853, xxi. p. 3.

Eleutheropetalum sartorii, Liebm.; Œrst. L'Amérique Centrale, p. 13, t. 3. figg. 1–6.

South Mexico, Mirador (*Liebmann*), valley of Cordova (*Bourgeau*, 1779).

38. **Chamædorea (Chamædoropsis) schiedeana,** Mart. in Linnæa, v. p. 204; Œrst. in Vidensk. Meddel. 1858, p. 22.

South Mexico, near Jalapa (*Schiede*). Cultivated specimens only in the Kew Herbarium.

39. **Chamædorea tepejilote,** Liebm.; Mart. Nat. Hist. Palm. iii. p. 308; Walp. Ann. iii. p. 456.

Stephanostachys tepejilote, Œrst. in Vidensk. Meddel. 1858, p. 28, et L'Amérique Centrale, p. 14, t. 7. figg. 26–28.

South Mexico, San Pedro Tepinapa, Oaxaca (*Liebmann*).

40. **Chamædorea (Euchamædorea) tenella,** Wendl. in Regel's Gartenflora, 1880, p. 102.

Nunnezharia tenella, Hook. f. Bot. Mag. t. 6584.

Mexico. Cultivated specimens in the Kew Herbarium.

This is one of the most diminutive of palms, flowering when less than a foot high; indeed the plate in the 'Botanical Magazine' was drawn from plants considerably under a foot in height. Sir Joseph Hooker says, "Our male specimen is exactly nine inches high, and the female seven, yet it ripened its fruit well."

41. **Chamædorea warscewicziana,** Wendl. in Bonplandia, 1862, x. p. 37.

Guatemala (*Warscewicz*). Cultivated specimens in the Kew Herbarium.

42. **Chamædorea wendlandiana,** Hemsl.

Stephanostachys wendlandiana, Œrst. in Vidensk. Meddel. 1858, p. 28, et L'Amérique Centrale, p. 14, t. 7. figg. 12–25.

Chamædorea tepejilote, Wendl. Ind. Palm. p. 65, fide Œrst.

South Mexico, Oaxaca (*Galeotti*). Hb. Kew.

In addition to those marked as being represented in the Kew Herbarium, there are doubtless several others among the unnamed specimens, and probably also some new ones; but it is impossible to determine them in the absence of authenticated specimens of so many of the described species.

8. SYNECHANTHUS.

Synechanthus, Wendl. in Bot. Zeit. 1858, p. 145; Benth. et Hook. Gen. Plant. iii. p. 912.
Reineckia, Karst. in Koch's Wochenschrift, i. p. 349.
Rathea, Karst. in Koch's Wochenschrift, i. p. 377, et ii. p. 15.

Besides the following, a third species, inhabiting Colombia, has been described.

1. **Synechanthus fibrosus,** Wendl. in Bot. Zeit. 1858, p. 145, et in Koch's Wochenschrift, ii. p. 15; Bot. Mag. t. 6572.

Chamædorea? fibrosa, Wendl. Ind. Palm. p. 57.
Collinia? fibrosa, Œrst. in Vidensk. Meddel. 1858, p. 5.
Rathea fibrosa, Karst. in Koch's Wochenschrift, i. p. 377.

Guatemala.

2. **Synechanthus warscewiczianus,** Wendl. in Bot. Zeit. 1858, p. 145, et in Koch's Wochenschrift, ii. p. 15.

Reineckea triandra, Karst. in Koch's Wochenschrift, i. p. 349.

Costa Rica (*Warscewicz*).

9. GEONOMA.

Geonoma, Willd. in Mem. Acad. Ber. 1804, p. 37, et Sp. Pl. iv.; Benth. et Hook. Gen. Plant. iii. p. 913.

An exclusively American genus, comprising about 100 species, generally spread in the tropical parts, though they are most numerous in Brazil.

1. **Geonoma binervia,** Œrst. in Vidensk. Meddel. 1858, p. 33.

Costa Rica, in the virgin forests on the San Juan (*Œrsted*).

2. **Geonoma cuneata,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

3. **Geonoma edulis,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, Turrialba (*Wendland*). Hb. Kew.

4. **Geonoma ferruginea,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

5. **Geonoma flaccida,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Guatemala, without locality (*Skinner*); Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

6. **Geonoma galeottiana,** Wendl. ined.?

South Mexico, Oaxaca (*Galeotti*). Hb. Kew.

7. **Geonoma gracilis,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

8. **Geonoma hoffmanniana,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, Volcan de Barba (*Hoffmann*). Hb. Kew.

9. **Geonoma longepetiolata,** Œrst. in Vidensk. Meddel. 1858, p. 36.

Costa Rica, in the virgin forest on the San Juan (*Œrsted*).

10. **Geonoma longevaginata,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

Costa Rica, Rio Sarapiqui (*Wendland*). Hb. Kew.

11. **Geonoma magnifica,** Linden et Wendl. in Linnæa, xxviii. p. 335; Walp. Ann. v. p. 841.

South Mexico, Tabasco (*Ghiesbreght*).

12. **Geonoma membranacea,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

GUATEMALA, Volcan de Fuego (*Wendland*). Hb. Kew.

13. **Geonoma mexicana,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 316; Walp. Ann. iii. p. 467.

SOUTH MEXICO, Lobani, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 721). Hb. Kew.

14. **Geonoma microspadix,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

NICARAGUA, Chontales (*Tate*, 259, 425); COSTA RICA, Rio Sarapiqui (*Wendland*). Hb. Kew.

15. **Geonoma obovata,** Wendl. in De Kerch. les Palmiers, p. 245 (nomen nudum).

COSTA RICA, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

16. **Geonoma procumbens,** Wendl. in De Kerch. les Palmiers, p. 246 (nomen nudum).

COSTA RICA, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

17. **Geonoma trifurcata,** Œrst. in Vidensk. Meddel. 1858, p. 34.

NICARAGUA, in the virgin forests on the San Juan (*Œrsted*).

18. **Geonoma versiformis,** Wendl. in De Kerch. les Palmiers, p. 246 (nomen nudum).

COSTA RICA, near Turrialba (*Wendland*). Hb. Kew.

10. ASTEROGYNE.

Asterogyne, Wendl. in litt. ex Benth. et Hook. Gen. Plant. iii. p. 914.

"Species paucæ Americæ centralis incolæ, quarum una tantum floribus delapsis nobis nota est."

1. **Asterogyne martiana,** Wendl.

Geonoma martiana, Wendl. in Linnæa, xxviii. p. 342; Walp. Ann. v. p. 841.

NICARAGUA, Chontales (*Seemann*, 163; *Lévy*, 905). Also cultivated specimens from Herrenhausen. Hb. Kew.

It is possible that some of the undescribed species formerly referred to *Geonoma* by Wendland belong to this genus and the next.

11. CALYPTROGYNE.

Calyptrogyne, Wendl. in Bot. Zeit. 1859, p. 72; Benth. et Hook. Gen. Plant. iii. p. 914.

About six or eight species are known; they inhabit Tropical America, including the West Indies.

1. **Calyptrogyne ghiesbrechtiana,** Wendl. in Bot. Zeit. 1859, p. 72.

Geonoma ghiesbrechtiana, Linden et Wendl. in Linnæa, xxviii. p. 343.

South Mexico, Chiapas (*Ghiesbreght*). Hb. Kew.

2. **Calyptrogyne glauca,** Wendl. in De Kerch. les Palmiers, p. 238.

Geonoma glauca, Œrst. in Vidensk. Meddel. 1858, p. 35.

Nicaragua, in the virgin forest on the San Juan (*Œrsted*).

3. **Calyptrogyne spicigera,** Wendl. in Bot. Zeit. 1859, p. 72.

Geonoma spicigera, K. Koch, Wochenschrift, 1858, p. 244.

Guatemala (*Wendland*).

4. **Calyptrogyne sarapiquensis,** Wendl. in De Kerch. les Palmiers, p. 238 (nomen nudum).

Costa Rica, on the Rio Sarapiqui (*Wendland*).

12. PHOLIDOSTACHYS.

Pholidostachys, Wendl. in Benth. et Hook. Gen. Plant. iii. p. 915, in nota sub *Calyptrogynide.*

Only one species is indicated.

1. **Pholidostachys pulchra,** Wendl.

Geonoma pulchra, Wendl. MSS. in herb. Kew.

Costa Rica, on the Rio Sarapiqui (*Wendland*).

13. WELFIA.

Welfia, Wendl. in Benth. et Hook. Gen. Plant. iii. p. 915.

In the 'Genera Plantarum' the number of species noted is two, but we have seen only one.

1. **Welfia georgii,** Wendl. in De Kerch. les Palmiers, p. 258 (nomen nudum).

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

14. SABAL.

Sabal, Adans. Fam. Nat. ii. p. 495; Benth. et Hook. Gen. Plant. iii. p. 922.

An exclusively American genus of about half a dozen species, ranging from Venezuela and Trinidad to Mexico, Florida, North Carolina, and the Bermudas.

1. **Sabal mexicana,** Mart. Hist. Nat. Palm. iii. p. 246, t. S. figg. 1–7, et t. V. fig. 4; Kunth, Enum. Pl. iii. p. 246.

South Mexico, Santiago Estata, Oaxaca, and Laguna Verde, Colipa (*Liebmann*).—Cuba. Hb. Kew.

We have a memorandum of the occurrence of *Sabal palmetto* around Matamoros (*Berlandier*, 2307), but we have not been able to verify it.

15. ACANTHORRHIZA.

Acanthorrhiza, Wendl. in Bot. Zeit. 1879, p. 147; Benth. et Hook. Gen. Plant. iii. p. 925.

There are two or three species, natives of Central America.

1. **Acanthorrhiza aculeata**, Wendl. in De Kerch. les Palmiers, p. 230; Ill. Hort. 1879, xxvi. p. 185, t. 367.

Trithrinax aculeata, Liebm.; Mart. Hist. Nat. Palm. iii. p. 320; Walp. Ann. iii. p. 470.

South Mexico, between La Galera and Pochutla (*Liebmann*).

2. **Acanthorrhiza mocinni**, Benth. et Hook. f. Gen. Pl. iii. p. 925.

Chamærops mocinni, H. B. K. Nov. Gen. et Sp. i. p. 300; Mart. Hist. Nat. Palm. iii. p. 252; Kunth, Enum. Pl. iii. p. 250.

South Mexico, Acapulco (*Humboldt & Bonpland*).

3. **Acanthorrhiza warscewiczii**, Wendl. in De Kerch. les Palmiers, p. 230 (nomen nudum).

Panama, Chiriqui (*Warscewicz*).

16. BRAHEA.

Brahea, Mart. Hist. Nat. Palm. iii. pp. 243, 319, tt. 137, 162; Benth. et Hook. Gen. Plant. iii. p. 926.

About four species inhabiting the Texano-Mexican region, and the Andes.

1. **Brahea calcarea**, Liebm.; Mart. Hist. Nat. Palm. iii. p. 319; Walp. Ann. iii. p. 470.

South Mexico, Xalcomulco at 2000 feet (*Liebmann*).

2. **Brahea dulcis**, Mart. Nat. Hist. Palm. iii. p. 244, tt. 137, 162; Kunth, Enum. Pl. iii. p. 245.

Corypha dulcis, H. B. K. Nov. Gen. et Sp. i. p. 300.

North Mexico, Cerro de la Silla, Nuevo Leon (*Berlandier*, 3216); South Mexico, Chapulco, Puebla (*Liebmann*), without locality (*Ehrenberg*), near La Moxonera and Alto de las Caxas, associated with pines and oaks, also near Chilpancingo and Mazatlan, 3000 to 4300 feet (*Humboldt & Bonpland*). Hb. Kew.

17. COPERNICIA.

Copernicia, Mart. Hist. Nat. Palm. ii. p. 56 (*Corypha*); Benth. et Hook. Gen. Plant. iii. p. 927.

In addition to the following doubtful species, there are about eight in Colombia, Brazil, and the West Indies.

1. **Copernicia nana**, Liebm. MSS. in herb. Kew.

Corypha nana, H. B. K. Nov. Gen. et Sp. i. p. 299; Kunth, Enum. Pl. iii. p. 237.
Cryosophila, Blume, fide Wendl. in De Kerch. les Palmiers, p. 241.

South Mexico, Cuesta de los Pozuelos, between Acapulco and Mazatlan (*Humboldt & Bonpland*), Tehuacan, Puebla (*Liebmann*). Hb. Kew.

18. THRINAX.

Thrinax, Linn. f. in Swartz, Prod. Fl. Ind. Occ. p. 57; Benth. et Hook. Gen. Plant. iii. p. 930.

About ten species are known, one in Florida and the rest in the West Indies.

1. **Thrinax argentea,** Lodd.; Kunth, Enum. Pl. iii p. 253; Mart. Hist. Nat. Palm. iii. p. 256; Seem. Bot. Voy. 'Herald,' p. 203; Griseb. Fl. Brit. W. Ind. p. 515.

Palma argentea, Jacq. Fragm. p. 38, t. 43.

Panama, in the forests, growing as underwood (*Seemann*).—Cuba; Hayti; Jamaica; Bahamas.

We have seen no specimen of this from the mainland, and include it on the authority of Seemann.

19. BACTRIS.

Bactris, Jacq. Stirp. Sel. Amer. t. 256; Benth. et Hook. Gen. Plant. iii. p. 941.

An exclusively Tropical American genus of about one hundred described species.

1. **Bactris acuminata,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 321; Walp. Ann. iii. p. 472; Œrst. l'Amérique Centrale, p. 15, t. 9. figg. 32–35.

South Mexico, Chinantla, Oaxaca (*Liebmann*). Hb. Kew.

2. **Bactris baculifera,** Karw.; Mart. Hist. Nat. Palm. iii. p. 322; Walp. Ann. iii. p. 472.

South Mexico, Chicaltepec (*Karwinski*).

3. **Bactris balanoidea,** Wendl. in De Kerch. les Palmiers, p. 233.

Augustinea balanoidea, Œrst. in Vidensk. Meddel. 1858, p. 39, et l'Amérique Centrale, p. 15, t. 9. figg. 1–13.

Pyrenoglyphis balanoidea, Karst. Fl. Columb. ii. p. 142.

Costa Rica, Puntarenas (*Œrsted*).

4. **Bactris caudata,** Wendl.

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

5. **Bactris (Eubactris) fusca,** Œrst. in Vidensk. Meddel. 1858, p. 43, et l'Amérique Centrale, p. 15, t. 8. figg. 16–29.

Costa Rica, virgin forest of Turrialba at 3000 feet (*Œrsted*).

6. **Bactris (Eubactris) horrida,** Œrst. in Vidensk. Meddel. 1858, p. 41; et l'Amérique Centrale, p. 16, t. 9. figg. 50–52.

Nicaragua, Guanacaste, and in the neighbourhood of Granada (*Œrsted*), Chontales (*Lévy*); Costa Rica, west side (*Œrsted*). Hb. Kew.

7. **Bactris longepetiolata,** Wendl. ined.?

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

8. **Bactris mexicana,** Mart. Palmet. Orbign. p. 65, et Hist. Nat. Palm. iii. p. 281; Œrst. l'Amérique Centrale, p. 15, t. 9. figg. 36–39.

South Mexico, Pitel and Jicaltepec on the river Nautl (*Liebmann*). Hb. Kew.

9. **Bactris minor,** Jacq. Sel. Stirp. Amer. p. 279, t. 171. fig. 1; Kunth, Enum. Pl. iii. p. 267; Seem. Bot. Voy. 'Herald,' p. 203.

Panama, in open places, seldom in woods (*Seemann*).—Venezuela; Colombia.

10. **Bactris œrstedii,** Traill, fide Wendl. in De Kerch. les Palmiers, p. 233.

Bactris (*Trichobactris*) *bifida,* Œrst. in Vidensk. Meddel. 1858, p. 44, non Mart.

Bactris (*Trichobactris*) *glandulosa,* Œrst. l'Amérique Centrale, p. 15, t. 8. figg. 1–15, et p. 16, t. 9. fig. 53?

Costa Rica, virgin forest of Turrialba (*Œrsted*).

11. **Bactris ovata,** Wendl. in De Kerch. les Palmiers, p. 234.

Augustinea ovata, Œrst. in Vidensk. Meddel. 1858, p. 38, et l'Amérique Centrale, p. 15, t. 9. figg. 14–20.

Nicaragua, Punto Poderoso, on the north side (*Œrsted*).

12. **Bactris polystachya,** Wendl. ined.?

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

13. **Bactris subglobosa,** Wendl. in De Kerch. les Palmiers, p. 234 (nomen nudum).

Salvador, near San Miguel (*Wendland*). Hb. Kew.

14. **Bactris utilis,** Benth. et Hook. Gen. Plant. iii. p. 942.

Gulielma utilis, Œrst. in Vidensk. Meddel. 1858, p. 46, et l'Amérique Centrale, p. 15, t. 9. figg. 40–49.

Costa Rica, in various localities (*Œrsted*). Hb. Kew.

15. **Bactris villosa,** Wendl. ined.?

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

16. **Bactris,** sp., Seem. Bot. Voy. 'Herald,' p. 203.

Panama, common on the sea-coast and covering the greater part of Iguana Island, vernacular name 'navito' (*Seemann*).

20. DESMONCUS.

Desmoncus, Mart. Hist. Nat. Palm. ii. p. 84, tt. 68, 69, iii. pp. 32, 277, 321, t. 165; Benth. et Hook. Gen. Plant. iii. p. 942.

About twenty-five species scattered over Tropical America.

1. **Desmoncus chinantlensis,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 321; Kunth, Enum. Pl. iii. p. 471.

South Mexico, in the primeval forests of Chinantla, Oaxaca (*Liebmann*). Hb. Kew.

2. **Desmoncus oxyacanthos,** Mart. Hist. Nat. Palm. iii. p. 88; Kunth, Enum. Pl. iii. p. 260; Seem. Bot. Voy. 'Herald,' p. 203.

Panama, on the outskirts of woods, climbing over trees and shrubs (*Seemann*).—Brazil.

3. **Desmoncus,** sp.?

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 876). Hb. Kew.

There is only one leaf of this, but it is apparently an undescribed species.

4. **Desmoncus,** sp.

South Mexico, Jocotepec, Lacoba (*Liebmann*). Hb. Kew.

21. ASTROCARYUM.

Astrocaryum, G. W. Mey. Prim. Fl. Esseq. p. 265; Benth. et Hook. Gen. Plant. iii. p. 942.

About thirty species are referred to the genus, which is restricted to Tropical America, the species being most numerous in Brazil.

1. **Astrocaryum mexicanum,** Liebm.; Mart. Hist. Nat. Palm. iii. p. 323; Walp. Ann. iii. p. 472.

South Mexico, Tepinapa and Chinantla, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*). Hb. Kew.

2. **Astrocaryum polystachyum,** Wendl. ined.?

Costa Rica, on the Rio Sarapiqui (*Wendland*). Hb. Kew.

3. **Astrocaryum,** sp.?

Panama, in the dark forests; native name "Pacuai" (*Seemann*). Hb. Kew.

22. ACROCOMIA.

Acrocomia, Mart. Hist. Nat. Palm. ii. p. 66, tt. 56, 57, iii. pp. 285, 322; Benth. et Hook. Gen. Plant. iii. p. 943.

An exclusively Tropical-American genus, of which eight species have been described.

1. **Acrocomia mexicana,** Karw.; Mart. Hist. Nat. Palm. iii. p. 285, t. 138.

South Mexico, Teoxomulco (*Karwinski*).

2. **Acrocomia sclerocarpa,** Mart. Hist. Nat. Palm. ii. p. 66, tt. 56, 57; Kunth, Enum. Pl. iii. p. 271; Seemann, Bot. Voy. 'Herald,' p. 203.

Panama, Isle of Taboga (*Hinds*), in open places, never in dark woods (*Seemann*).—Venezuela to Guiana and Brazil, and in the West Indies, from Jamaica to Trinidad. Hb. Kew.

3. **Acrocomia vinifera,** Œrst. in Vidensk. Meddel. 1858, p. 47.

Nicaragua and Costa Rica, on the west side and especially abundant in the volcanic district (*Œrsted*).

23. ELÆIS.

Elæis, Jacq. Sel. Stirp. Amer. p. 280, t. 272; Benth. et Hook. Gen. Plant. iii. p. 944.
Alfonsia, H. B. K. Nov. Gen. et Sp. i. p. 306.

Four or five species divided between Tropical Africa and Tropical America.

1. **Elæis melanococca,** Gærtn. Fruct. i. p. 18, t. 6; Mart. Hist. Nat. Palm. ii. p. 64, tt. 33, 35; Kunth, Enum. Pl. iii. p. 279; Seem. Bot. Voy. 'Herald,' p. 204; Œrst. in Vidensk. Meddel. 1858, p. 51 (var. *semicircularis*).

Costa Rica, on the western side (*Œrsted*); Panama, in woods, common all over the country (*Seemann*).—Venezuela to Brazil.

24. COCOS.

Cocos, Linn. Gen. Plant. n. 1223; Benth. et Hook. Gen. Plant. iii. p. 945.

Of this genus, about thirty species are enumerated; they all inhabit Tropical and Southern Subtropical America, and one of them the tropics of the Old World as well.

1. **Cocos nucifera,** Linn.; Mart. Hist. Nat. Palm. ii. p. 123, tt. 62, 65 et 68; Kunth, Enum. Pl. iii. p. 285; Seem. Bot. Voy. 'Herald,' p. 204; Griseb. Fl. Brit. W. Ind. p. 522.

Panama, both wild and cultivated on the sea-shores and northwards (*Seemann*).

The cocoa-nut tree is now so generally distributed on tropical sea-coasts that it is not possible to say whether it has spread from America or the Old World. Some writers regard the western coast of America as its original home, while others think the evidence points to the Indian Archipelago.

25. ATTALEA.

Attalea, H. B. K. Nov. Gen. et Sp. i. p. 309, tt. 95 et 96; Benth. et Hook. Gen. Plant. iii. p. 947.

About twenty species spread over Tropical America.

1. **Attalea cohune,** Mart. Hist. Nat. Palm. iii. p. 300, t. 167; Walp. Ann. i. p. 1008; Œrst. in Vidensk. Meddel. 1858, p. 50; Seem. Bot. Voy. 'Herald,' p. 204.

Honduras (*Loddiges; Temple*); Panama, common (*Seemann*). Hb. Kew.

2. **Attalea? rostrata,** Œrst. in Vidensk. Meddel. 1858, p. 50.

Costa Rica, Puntarenas (*Œrsted*).

[The Pandaneæ, an order of two genera and about eighty species, are restricted to the Old World, and for the greater part inhabit maritime districts. *Pandanus utilis* is cultivated in the West Indies.]

Order CLII. CYCLANTHACEÆ.

Cyclanthaceæ, Benth. et Hook. Gen. Plant. iii. p. 952.

This order is wholly American, and consists of four genera and about thirty-five species, many of which, however, are only imperfectly known.

1. CARLUDOVICA.

Carludovica, Ruiz et Pav. Fl. Peruv. et Chil. Prodr. p. 146, t. 31; Benth. et Hook. Gen. Plant. iii. p. 953.

About thirty species generally spread in Tropical America and the West-Indian Islands.

1. **Carludovica œrstedii,** Hemsl.

Evodianthus angustifolius, Œrst. in Vidensk. Meddel. 1857, p. 195, et l'Amérique Centrale, p. 13, t. 1; Walp. Ann. v. p. 860.

COSTA RICA, at elevations of 3000 to 4000 feet (*Œrsted*).

2. **Carludovica microphylla,** Œrst. in Vidensk. Meddel. 1857, p. 197; Walp. Ann. v. p. 860.

COSTA RICA, Turrialba (*Œrsted*).

3. **Carludovica utilis,** Benth. et Hook. Gen. Plant. iii. p. 953.

Sarcinanthus utilis, Œrst. in Vidensk. Meddel. 1857, p. 197, et l'Amérique Centrale, p. 13, t. 2; Walp. Ann. v. p. 861.

COSTA RICA, at elevations of 3000 to 4000 feet (*Œrsted*).

Order CLIII. TYPHACEÆ.

Typhaceæ, Benth. et Hook. Gen. Plant. iii. p. 954.

Aquatic and marsh plants of very wide distribution. The order consists of the two genera *Sparganium* and *Typha* and about fifteen species.

1. TYPHA.

Typha, Linn. Gen. Plant. n. 1040; Benth. et Hook. Gen. Plant. iii. p. 955.

About ten species, some of which are almost cosmopolitan.

1. "**Typha,** an **latifolia,** Linn.? an **truxillensis,** H. B. K.?" Ch. et Schl. in Linnæa, vi. p. 23.

SOUTH MEXICO, Lake of Jalapa (*Schiede & Deppe*).

We have seen no specimen of any species of this genus from within our limits. It is probable that the form collected by Schiede and Deppe was *T. angustifolia,* Linn., var. *domingensis,* Pers., which ranges from Texas, through the West Indies to Brazil.

Order CLIV. AROIDEÆ.

Aroideæ, Benth. et Hook. Gen. Plant. iii. p. 955.

Ninety-eight genera are retained by Bentham and Hooker, and the number of described species is nearly nine hundred. They are most numerous and generally spread in tropical countries and altogether absent from the colder regions.

1. PISTIA.

Pistia, Linn. Fl. Zeyl. p. 152, et Gen. Plant. n. 1023; Benth. et Hook. Gen. Plant. iii. p. 964.

An aquatic monotype.

1. **Pistia stratiotes,** Linn. Fl. Zeyl. p. 152; Engler in Mart. Fl. Bras., Araceæ, p. 214, et in DC. Monogr. Phanerog. ii. p. 634.

γ. **obcordata,** Engler in Mart. Fl. Bras., Araceæ, p. 214, et in DC. Monogr. Phanerog. ii. p. 634; Hook. Bot. Mag. t. 4564 (species), icon in Flore des Serres, t. 625 repetita.

Pistia occidentalis, Blume, Rumphia, i. p. 79; Liebm. Om Mexicos Aroideer, p. 3.
Pistia spathulata, Michx.; Liebm. l. c.
Apiospermum obcordatum, Klotzsch in Abhandl. K. Akad. Wiss. Berl. 1853, reprint, p. 23.
Pistia texensis, Klotzsch in Abhandl. K. Akad. Wiss. Berlin, 1852, reprint, p. 28, tt. 1–3.
Pistia schleideniana, Klotzsch, l. c.
Limnonesis commutata et *L. friedrichsthaliana*, Klotzsch in Abhandl. K. Akad. Wiss. Berl. 1853, reprint, p. 24.

South Mexico, near Estero (*Schiede & Deppe*), San Blas to Tepic (*Sinclair*), valley of Mexico (*Schaffner*); Nicaragua, neighbourhood of Granada (*Lévy*, 90); Panama, (*Seemann*).—Generally dispersed in Tropical and Subtropical Regions, except Australia. Hb. Kew.

The varieties are connected by intermediate forms, and Engler states that some of the Mexican specimens are intermediate between his β. *spathulata*, Michx. (species), and his γ. *obcordata*.

2. ARISÆMA.

Arisæma, Mart. in Flora, 1831, ii. p. 459; Benth. et Hook. Gen. Plant. iii. p. 965.

There are about fifty described species, the majority of them inhabiting subtropical and temperate Asia, a few North America, and one Abyssinia.

1. **Arisæma dracontium,** Schott, Meletem. i. p. 17, et Prodr. Aroid. p. 39; Chapm. Fl. Southern U. S. p. 440; Engler in DC. Monogr. Phanerog. ii. p. 547.
Arum dracontium, Linn. Sp. Pl. ed. 1, p. 964, ed. 2, p. 1368; Bot. Reg. t. 668.

Pennsylvania and Kentucky southward to Georgia and Texas.—North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*). Hb. Kew.

There is a little doubt about the Mexican plant being the same species.

2. **Arisæma macrospathum,** Benth. Pl. Hartw. p. 52; Engler in DC. Monogr. Phanerog. ii. p. 546; Schott, Prodr. Aroid. p. 38.

South Mexico, Morelia (*Hartweg*, 394), region of Orizaba (*Bourgeau*, 2522), without locality (*Parkinson*). Hb. Kew.

3. XANTHOSOMA.

Xanthosoma, Schott, Melet. i. p. 19, et Gen. Aroid. t. 46; Benth. et Hook. Gen. Plant. iii. p. 976.

An exclusively Tropical-American genus, of about twenty-five known species.

1. **Xanthosoma helleborifolium,** Schott in Œster. Bot. Zeitschr. 1865, p. 33; Engler in DC. Monogr. Phanerog. ii. p. 486.

Acontias helleborifolius, Schott, Melet. i. p. 19, et Prodr. Aroid. p. 197; Griseb. Fl. Brit. W. Ind. p. 511.

Arum helleborifolium, Jacq. Ic. Pl. Rar. iii. t. 613.

Panama (fide *Grisebach*).—Venezuela to Peru, Brazil, and Guiana, and in the West Indies.

2. **Xanthosoma hoffmannii,** Schott in Œster. Bot. Zeitschr. 1865, p. 33; Engler in DC. Monogr. Phanerog. ii. p. 485.

Acontias hoffmannii, Schott, Prodr. Aroid. p. 196.

Costa Rica, San José (*Hoffmann*).

β. **wendlandii,** Engler in DC. Monogr. Phanerog. ii. p. 485.

Acontias wendlandii, Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 195.

Costa Rica (*Wendland*).

3. **Xanthosoma jacquini,** Schott, Melet. i. p. 19, Syn. Aroid. p. 57, et Prodr. Aroid. p. 183; Engler in DC. Monogr. Phanerog. ii. p. 470.

Caladium xanthorrhizon, Boos, Cat. p. 348.

Alocasia undipes, K. Koch et Bouché in Ind. Sem. Hort. Berol. 1854, Append. p. 5.

Xanthosoma undipes, K. Koch in Bonplandia, 1856, p. 4.

Xanthosoma sagittifolium, Liebm. Om Mexicos Aroideer, p. 5, non Schott.

South Mexico, Mirador (*Liebmann*).—Venezuela. Hb. Kew.

4. **Xanthosoma mexicanum,** Liebm. Om Mexicos Aroideer, p. 5; Engler in DC. Monogr. Phanerog. ii. p. 479; Schott, Prodr. Aroid. p. 185.

South Mexico, Trapiche de la Concepcion, near Comaltepec, Oaxaca, at 3000 feet (*Liebmann*).

5. **Xanthosoma pedatum,** Hemsl. n. sp.

Xanthosomati cubensi affinis, differt foliis glaucescentibus segmentis infimis semihastatis, spadice breviore crassioreque etc.

Herba, ut videtur, acaulis, undique glaberrima, pedunculis in foliorum vaginis (saltem in specimine unico Salviniano) duobus. *Folia* solitaria?, subtus glaucescentia, longe petiolata; lamina pedato-quinquesecta, circa 15 poll. diametro, circumscriptione reniformia; segmenta discreta,

integra, acuminata, acuta, sinibus latiusculis rotundatis; segmenta intermedia et centrale ovata, basi truncata; segmenta infima semihastata, lobo basilari rotundato; omnia nervis lateralibus primariis pluribus sursum gradatim minus conspicuis, in nervum collectivum margine sat remotum conjunctis; petiolus fere bipedalis, concolor, anguste vaginatus, in siccitate nullo loco 6 lineas crassus. *Pedunculi* quam folium multo breviores. *Spatha* 7–8 poll. longa, infra medium ventricoso-tubulosa, lamina lanceolata, acuta, spadix 2–2½ poll. excedens, quam tubus longior, omnino floribus vestita. *Spadix* crassiuscula, cylindrica, vel leviter clavata, parte exserta mascula. *Synandria* 12–16 locellata, apice disciformia, sessilia. *Ovarium* multi-ovulatum. *Fructus* ignotus.

Guatemala, Barranca Honda 3800 feet (*Salvin*). Hb. Kew.

This is closely related to *X. cubense*, Engler (*Acontias cubensis*, Schott, but not *Andromycia cubensis*, Rich., which Engler cites as a synonym, though it is a very distinct plant); but it is readily distinguished by the segments of the leaves being divergent (not overlapping), and by the lower ones being half-hastate. The slenderer petiole is not mottled; and the stouter spadix is decidedly obtuse and relatively shorter. Further, the leaves of the present plant are glaucous beneath. Other differences may exist in the female flowers and fruit; but as they are in a partly decomposed state, we can only say that the ovules are numerous, all traces of the dissepiments having disappeared.

6. **Xanthosoma pilosum,** K. Koch in Ind. Sem. Hort. Berol. 1855, Append. p. 2; Engler in DC. Monogr. Phanerog. ii. p. 479; Schott, Prodr. Aroid. p. 186.

Costa Rica (*Hoffmann*).—Colombia.

7. **Xanthosoma robustum,** Schott in Œster. Bot. Wochenbl. 1853, p. 370, Syn. Aroid. p. 58, et Prodr. Aroid. p. 182; Engler in DC. Monogr. Phanerog. ii. p. 474.

South Mexico, Mirador (*Liebmann*), Orizaba (*Bourgeau*, 2417).

8. **Xanthosoma roseum,** Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 180; Engler in DC. Monogr. Phanerog. ii. p. 475.

Costa Rica, San José (*Hoffmann*).

Also recorded from Guadalupe Island.

9. **Xanthosoma sagittifolium,** Schott, Meletem. i. p. 19, Syn. Aroid. p. 56, et Prodr. Aroid. p. 179; Engler in DC. Monogr. Phanerog. ii. p. 469; Bot. Mag. t. 4989; Griseb. Fl. Brit. W. Ind. p. 511.

Arum sagittifolium, Linn. Sp. Pl. ed. 2, p. 1369.

South Mexico, valley of Cordova (*Bourgeau*, 1903).—West Indies, from Cuba and Jamaica to Barbados. Hb. Kew.

4. PHILODENDRON.

Philodendron, Schott, Meletem. i. p. 19; Benth. et Hook. Gen. Plant. iii. p. 978.

An exclusively Tropical-American genus of about 120 known species.

1. **Philodendron advena,** Schott in Œster. Bot. Wochenbl. 1855, p. 289, et Prodr. Aroid. p. 257; Engler in DC. Monogr. Phanerog. ii. p. 398.

South Mexico (fide *Schott*).

2. **Philodendron affine,** Hemsl. Diag. Pl. Nov. p. 37. (Tab. C.)

Repens, radicans, foliis tripartitis sinibus apertis rotundatis, segmentis lateralibus minoribus falcatis, spatha pedunculata quam folia triplo breviori medio constricto extus cæruleo-viridi roseo tincta intus sanguinea margine flavo-viridi, spadice albido-flavescenti.

Caudex crassiusculus, reptans, ad nodos radicans. *Folia* longe petiolata, cum petiolo tereti usque bipedalia, tripartita, creberrime immerse pennivenia, basi late cordata, segmentis lateralibus minoribus et dimidio brevioribus falcatis et adscendentibus vel interdum in foliis minoribus ovatis et divaricatis vel deflexis, sinibus apertissimis rotundatis, segmento intermedio oblongo-lanceolato acuminato, foliorum maximorum 9–10-pollicari circiter 5-nervio. *Spatha* pedunculata, 4–5-pollicaris, infra medium valde constricta, basi subglobosa, clausa, extus cæruleo-viridis, roseo tincta, intus sanguinea, margine flavo-viridis, pedunculo crasso tereti spathæ subæquilongo. *Spadix* vix exsertus, albido-flavescens. *Ovarium* 6-loculare?, loculis 4–5-ovulatis.

Guatemala, Barranca Honda, Volcan de Fuego, 3800 feet (*Salvin*). Hb. Kew.

Allied to *P. tripartitum*, which has acute sinuses to the leaves and light-coloured spathes, &c.

3. **Philodendron anisotomum,** Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 288.

Philodendron fenzlii, β. *anisotomum*, Engler in DC. Monogr. Phanerog. ii. p. 412.

South Mexico, near San Bartolomo at 4000 to 5000 feet (*Liebmann*); Guatemala (*Wendland*).

Since the publication of our *Philodendron affine*, the leaves in Wendland's herbarium, upon which Schott founded his *Philodendron anisotomum*, have been compared by Mr. N. E. Brown with Mr. Salvin's specimens of our plant in the Kew Herbarium, and he regards them, probably correctly, as the same species; but we do not feel justified in actually reducing our species, because a species founded upon leaves alone hardly deserves recognition, and it is too late to cancel our name on the plate. Engler (in DC. Monogr. Phanerog. ii. p. 412) treats *Philodendron anisotomum*, Schott, as a variety of his own more recently described *Philodendron fenzlii*, which is apparently distinct from our *P. affine*, at least.

4. **Philodendron augustinum,** K. Koch in Ind. Sem. Hort. Berol. 1853–4, et in Ann. Sc. Nat. série 4, i. p. 341; Schott, Prodr. Aroid. p. 294; Engler in DC. Monogr. Phanerog. ii. p. 419.

Central America? (*Warscewicz*).

5. **Philodendron brevispathum,** Schott in Bonplandia, 1859, p. 29, et Prodr. Aroid. p. 254; Engler in DC. Monogr. Phanerog. ii. p. 392.

Panama, Chagres (*Fendler*, 431). Hb. Kew.

6. **Philodendron cuspidatum,** K. Koch in Ind. Sem. Hort. 1854, Append. p. 7; Schott, Prodr. Aroid. p. 241; Engler in DC. Monogr. Phanerog. ii. p. 387.

Philodendron micans, Klotzsch et K. Koch in Ind. Sem. Hort. Berol. 1854, Append. p. 7; Schott, Prodr. Aroid. p. 242.

South Mexico, around Colipa, Vera Cruz (*Liebmann*); Panama (*Wagner*).

7. **Philodendron dæmonum,** Liebm. Om Mexicos Aroideer, p. 7 (Vidensk. Meddel. 1850, p. 17); Schott, Prodr. Aroid. p. 271; Engler in DC. Monogr. Phanerog. ii. p. 407.

South Mexico, Colipa, Vera Cruz (*Liebmann*). Hb. Kew.

8. **Philodendron fenzlii,** Engler in Mart. Fl. Bras., Araceæ, p. 144, et in DC. Monogr. Phanerog. ii. p. 412, excl. β *anisotomum* ?

Mexico ("fide *Schott*").

This must be very closely allied to our *Philodendron affine*; but Engler's description of the spathe ("*spathæ oblongo-ovatæ, subcucullatæ, brevissime cuspidulatæ, extus virides, intus pallide flavæ et ochraceo-striolatæ, tubo indistincto laminæ subæquilongo*") does not agree.

9. **Philodendron gracile,** Schott, Prodr. Aroid. p. 244; Engler in DC. Monogr. Phanerog. ii. p. 391.

Costa Rica (*Wendland*). Hb. Kew.

10. **Philodendron guttiferum,** Kunth, Enum. Pl. iii. p. 51; Schott, Prodr. Aroid. p. 231; Engler in DC. Monogr. Phanerog. ii. p. 361.

Philodendron aurantiifolium, Schott, in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 230; Œrst. Præcurs. Fl. Centro-Am. p. 58.

Costa Rica, Aguacate (*Hoffmann*).—Peru; Guiana.

11. **Philodendron hoffmannii,** Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 256; Engler in DC. Monogr. Phanerog. ii. p. 399; Œrst. Præcurs. Fl. Centro-Am. p. 59.

Costa Rica, Aguacate (*Hoffmann*).

12. **Philodendron inæquilaterum,** Liebm. Om Mexicos Aroideer, p. 6 (Vidensk. Meddel. 1850, p. 16); Schott, Prodr. Aroid. p. 234; Engler in DC. Monogr. Phanerog. ii. p. 363.

South Mexico, in shady woods near Pital, Vera Cruz (*Liebmann*).

13. **Philodendron ligulatum,** Schott, Prodr. Aroid. p. 224; Engler in DC. Monogr. Phanerog. ii. p. 361.

Costa Rica (*Wendland*).

14. **Philodendron mexicanum,** Engler in Mart. Fl. Bras., Araceæ, p. 123, et in DC. Monogr. Phanerog. ii. p. 409.

South Mexico, valley of Cordova (*Bourgeau*, 2176).

15. **Philodendron oxycardium,** Schott, Syn. Aroid. p. 82, et Prodr. Aroid. p. 241; Engler in DC. Monogr. Phanerog. ii. p. 386.

Philodendron acrocardium, Schott in Œster. Bot. Zeitschr. 1858, p. 179; Prodr. Aroid. p. 260.

Philodendron isertianum, Schott, Prodr. Aroid. p. 242 (fide Engler).

Guatemala (*Wendland*).—St. Thomas; Martinique; Brazil?

16. **Philodendron polytomum,** Schott in Bonplandia, 1859, p. 164, et Prodr. Aroid. p. 293; Engler in DC. Monogr. Phanerog. ii. p. 420.

South Mexico, Hacienda de Santa Barbara, Colipa, Vera Cruz (*Liebmann*), valley of Cordova (*Bourgeau*, 1788). Hb. Kew.

17. **Philodendron pterotum,** K. Koch in Ind. Sem. Hort. Berol. 1854, Append. p. 6; Schott, Prodr. Aroid. p. 249; Engler in DC. Monogr. Phanerog. ii. p. 378.

Central America (*Wendland*). Cultivated specimens in Kew Herbarium.

18. **Philodendron radiatum,** Schott in Œster. Bot. Wochenbl. iii. (1853), p. 378, et Prodr. Aroid. p. 292; Engler in DC. Monogr. Phanerog. ii. p. 418.

Philodendron impolitum, Schott Prodr. Aroid. p. 291 (fide Engler).

South Mexico (fide *Schott*); Nicaragua (*Friedrichsthal*).

19. **Philodendron sagittifolium,** Liebm. Om Mexicos Aroideer, p. 7 (Vidensk. Meddel. 1850, p. 17); Schott, Prodr. Aroid. p. 272; Engler in DC. Monogr. Phanerog. ii. p. 406.

Philodendron tanyphyllum, Schott, Prodr. Aroid. p. 272 (fide Engler).

South Mexico, in woods near Pital (*Liebmann*), valley of Cordova and Cuernavaca (*Bourgeau*, 1417, 2296). Hb. Kew.

20. **Philodendron sanguineum,** Regel, Gartenflora, 1869, p. 196, t. 621; Engler in DC. Monogr. Phanerog. ii. p. 408.

South Mexico, valley of Cordova (*Karwinski*).

21. **Philodendron schottianum,** Wendl. ex Schott in Œster. Bot. Zeitschr. 1865, p. 72; Engler in DC. Monogr. Phanerog. ii. p. 390.

Costa Rica (*Wendland*).

22. **Philodendron seguine,** Schott in Bonplandia, 1859, p. 164, et Prodr. Aroid. p. 231; Engler in DC. Monogr. Phanerog. ii. p. 359.

South Mexico, Oaxaca (*Liebmann*).

23. **Philodendron subovatum,** Schott in Œster. Bot. Wochenbl. 1855, p. 289, et Prodr. Aroid. p. 255; Engler in DC. Monogr. Phanerog. ii. p. 400.

South Mexico (fide *Schott*).

24. **Philodendron tripartitum,** Schott, Meletem. i. p. 19, et Prodr. Aroid. p. 286; Engler in DC. Monogr. Phanerog. ii. p. 411.

Arum tripartitum, Jacq. Hort. Schœnbr. ii. p. 33, t. 190.

Philodendron dagilla, Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 287; Œrst. Præcurs. Fl. Centro-Am. p. 60 (fide Engler).

Costa Rica (*Œrsted*).—Venezuela.

β. **tricuspidatum,** Engler in DC. Monogr. Phanerog. ii. p. 411.

Costa Rica (*Hoffmann*).

25. **Philodendron warscewiczii,** K. Koch in Ind. Sem. Hort. Berol. 1855, Append. p. 4; Schott, Prodr. Aroid. p. 295; Œrst. Præcurs. Fl. Centro-Am. p. 61.

Guatemala (*Wendland*); Costa Rica, San José (*Warscewicz*). Hb. Kew.

26. **Philodendron wendlandi,** Schott, Prodr. Aroid. p. 221; Engler in DC. Monogr. Phanerog. ii. p. 368; Œrst. Præcurs. Fl. Centr.-Am. p. 57.

Central America (*Wendland*).

5. SYNGONIUM.

Syngoninm, Schott in Wien. Zeitschr. iii. p. 780, excl. Sp. et Gen. Aroid. t. 48; Benth. et Hook. Gen. Plant. iii. p. 979.

About eight or ten species, all natives of Tropical America.

1. **Syngonium angustatum,** Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 213; Œrst. Præcurs. Fl. Centro-Am. p. 57; Engler in DC. Monogr. Phanerog. ii. p. 300.

Nicaragua (*Œrsted*).

2. **Syngonium auritum,** Schott, Meletem. i. p. 19, et Prodr. Aroid. p. 205; Engler in DC. Monogr. Phanerog. ii. p. 293.

Arum auritum, Linn. Sp. Pl. ed. 2, p. 1371; Jacq. Hort. Schœnbr. ii. p. 23, t. 191.

Caladium auritum, Vent. in Willd. Sp. Pl. iv. p. 491; H. B. K. Nov. Gen. et Sp. i. p. 80.

Syngonium plumieri, Schott, Prodr. Aroid. p. 206.

β. **neglectum,** Engler in DC. Monogr. Phanerog. ii. p. 294; Schott in Bonplandia, 1859, p. 163, et Prodr. Aroid. p. 210 (species).

South Mexico, Mirador, Vera Cruz at 3000 feet (*Liebmann*); Iturbide, Cuernavaca (*Bourgeau,* 1419). Hb. Kew.

The typical form of this species is a native of Jamaica.

3. **Syngonium œrstedianum,** Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 212; Œrst. Præcurs. Fl. Centro-Am. p. 57; Engler in DC. Monogr. Phanerog. p. 299.

Costa Rica, Guanacaste (*Œrsted*).

4. **Syngonium peliocladum,** Schott, Prodr. Aroid. p. 202; Engler in DC. Monogr. Phanerog. ii. p. 297.

Costa Rica (*Wendland*).

5. **Syngonium podophyllum,** Schott, Syn. Aroid. p. 68, et Prodr. Aroid. p. 211; Engler in DC. Monogr. Phanerog. ii. p. 298.

Syngonium salvadorense, Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 201.

South Mexico, Mirador, Vera Cruz (*Liebmann*); Salvador, Santa Ana (*Wendland*).

6. **Syngonium wendlandi,** Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 201; Engler in DC. Monogr. Phanerog. ii. p. 294; Œrst. Præcurs. Fl. Centro-Am. p. 56.

Costa Rica (*Wendland*).

7. **Syngonium xanthophilum,** Schott, Prodr. Aroid. p. 214; Engler in DC. Monogr. Phanerog. ii. p. 300.

Mexico (fide *Schott*).

6. PORPHYROSPATHA.

Porphyrospatha, Engler in DC. Monogr. Phanerog. ii. p. 289; Benth. et Hook. Gen. Plant. iii. p. 980.

The two species described are restricted to Central America.

1. **Porphyrospatha hoffmannii,** Engler in DC. Monogr. Phanerog. ii. p. 291.

Syngonium hoffmannii, Schott in Œster. Bot. Zeitschr. 1858, p. 178, et Prodr. Aroid. p. 200; Œrst. Præcurs. Fl. Centro-Am. p. 55.

Costa Rica, Candelaria (*Hoffmann*).

2. **Porphyrospatha schottiana,** Engler in DC. Monogr. Phanerog. ii. p. 290.

Syngonium schottianum, Wendl. ex Schott, Prodr. Aroid. p. 199; Œrst. Præcurs. Fl. Centr.-Am. p. 55.

Costa Rica (*Wendland*).

7. MONTRICHARDIA.

Montrichardia, Crüger in Bot. Zeit. 1854, p. 25; Benth. et Hook. Gen. Plant. iii. p. 982.

Besides the following there are two or three species in Guiana and Brazil.

1. **Montrichardia fendleri,** Schott, Gen. Aroid. t. 49, et Prodr. Aroid. p. 216; Engler in DC. Monogr. Phanerog. ii. p. 289.

Panama, Chagres (*Fendler*, 432, 433). Hb. Kew.

8. HOMALOMENA.

Homalomena, Schott, Meletem. i. p. 20, et Gen. Aroid. t. 61; Benth. et Hook. Gen. Plant. iii. p. 983.

This is one of the very few genera of this Order which are represented both in

America and the Old World. From fifteen to twenty species are known, two thirds of them from Tropical Asia and the rest Tropical America.

1. **Homalomena wendlandii,** Schott, Prodr. Aroid. p. 308; Engler in DC. Monogr. Phanerog. ii. p. 340.

COSTA RICA (*Wendland*). Cultivated specimens only in the Kew Herbarium.

9. DIEFFENBACHIA.

Dieffenbachia, Schott, Meletem. i. p. 20, et Gen. Aroid. t. 63; Benth. et Hook. Gen. Plant. iii. p. 986.

A genus of about six species, restricted to Tropical America.

1. **Dieffenbachia œrstedii,** Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 327; Engler in DC. Monogr. Phanerog. ii. p. 449.

MEXICO (fide *Engler*); COSTA RICA (*Hoffmann; Œrsted*).

10. STENOSPERMATION.

Stenospermation, Schott, Gen. Aroid. t. 70; Benth. et Hook. Gen. Plant. iii. p. 990.

An exclusively Tropical-American genus of about half a dozen known species.

1. **Stenospermation? angustifolium,** Hemsl., n. sp.

Glabra, foliis tenuibus anguste lanceolatis, petiolo superne inappendiculato gracili, spadice brevissime stipitato, ovario biloculari, loculis biovulatis.

Herba vel *suffrutex* caudicibus graciliusculis, internodiis brevibus. *Folia* membranacea, petiolata, anguste lanceolata, absque petiolo 4–7 poll. longa, medio usque sesquipoll. lata, utrinque cuneata, apice acutissima, nervis lateralibus primariis creberrimis obscuris; petiolus 3–4 poll. longus, infra anguste vaginatus, parte inappendiculata gracili 1–2 poll. longa. *Pedunculus* folio multo brevior, gracilis. *Spatha* deest. *Spadix* nutans, cylindricus, circiter pollicaris, floriger $1\frac{1}{2}$–2 lineas diametro, brevissime stipitatus vel subsessilis. *Ovarium* biloculare, loculis biovulatis; ovula a basi loculorum erecta.

NICARAGUA, Chontales (*Tate*). Hb. Kew.

Several genera of this tribe (the *Colleæ*) are very artificial, as it appears to us, the principal differences adduced being the number of cells in the ovary and the number of ovules in each cell, associated with a deciduous or persistent spathe and a sessile or stipitate spadix. In these characters the present plant is intermediate between *Stenospermation* and the Old-World *Rhaphidophora*, while in habit it would do for either.

2. **Stenospermation? marantæfolium,** Hemsl., n. sp.

Glabra, foliis ovato-oblongis acute acuminatis, petiolo per totam longitudinem vaginato, spadice brevi longiuscule stipitato, ovario uniloculari?, ovulis 10–12.

Herba vel *suffrutex,* caudicibus crassiusculis. *Folia* in siccis subcoriacea, petiolata, ovato-oblonga vel elliptica, absque petiolo 4–7 poll. longa, maxima 3 poll. lata, basi rotundata, apice acute acuminata vel subcaudata, nervis lateralibus primariis numerosissimis creberrimis, sat conspicuis, apicem laminæ versus curvatim adscendentibus; petiolus $1\frac{1}{2}$–$2\frac{1}{4}$ poll. longus, usque ad

apicem latiuscule vaginatus, vagina apice rotundato-biauriculata. *Pedunculus* crassiusculus, e vagina folii breviter (circiter 1 poll.) exsertus. *Spatha* deest. *Spadix* erectus, oblongus, crassiusculus, semipoll. longus, distincte stipitatus (stipes 3–4 lineas longus). *Ovarium* uniloculare ?, 10–12-ovulatum, ovulis erectis.

Nicaragua (*Tate*, 401). Hb. Kew.

The ovary appeared perfectly one-celled in the rather advanced stage of the only inflorescence; and the ovules were all erect from the base of the ovary; but it is possible that a partial or complete partition exists at an earlier stage. It is not easy to get a good section of the ovary, as the walls are full of raphides and the cavity full of mucilage, in which the ovules are imbedded.

11. MONSTERA.

Monstera, Adans. Fam. ii. p. 470; Benth. et Hook. Gen. Plant. iii. p. 991.

A wholly Tropical-American genus of about twelve species.

1. **Monstera acuminata,** K. Koch in Ind. Sem. Hort. Berol. 1855, App. p. 4; Engler in DC. Monogr. Phanerog. ii. p. 256.

Central America? (*Warscewicz*). Cultivated specimens in the Kew Herbarium.

2. **Monstera deliciosa,** Liebm. Om Mexicos Aroideer, p. 9; Engler in DC. Monogr. Phanerog. ii. p. 265.

Tornelia fragrans, Gutierrez; Linnæa, xxvi. p. 382; Schott, Prodr. Aroid. p. 354, et Gen. Aroid. t. 74.
Monstera bennea, K. Koch in Bot. Zeit. 1852, p. 277.
Philodendron pertusum, Kunth et Bouché in Ind. Sem. Hort. Berol. 1848.
Monstera borsigiana, K. Koch; Engler in DC. Monogr. Phanerog. p. 266.

South Mexico, region of Oaxaca 5000 to 7000 feet (*Liebmann*), without locality (*Karwinski*), valley of Cordova (*Bourgeau*, 1904); Guatemala (*Warscewicz*). Hb. Kew.

We are unable to separate *M. borsigiana* from *M. deliciosa.* Engler (*l. c.*) says of the former:—"Species sæpe cum precedente [i. e. *M. deliciosa*] in hortis commutata, sed foliorum petiolis lævibus atque lamina multo minore foraminibusque paucioribus perforata diversa." The petiole of *Monstera deliciosa* he describes as with "geniculo late crispato-marginato." Among the cultivated specimens in Kew Herbarium, attested as being from the same plant by Mr. N. E. Brown, are leaves both with and without the appendage to the petiole.

3. **Monstera dilacerata,** K. Koch in Ind. Sem. Hort. Berol. 1855, Append. p. 5; Engler in DC. Monogr. Phanerog. ii. p. 264.

Costa Rica, Volcan de Turrialba (*Wendland*).—Guiana.

4. **Monstera egregia,** Schott; Engler in DC. Monogr. Phanerog. ii. p. 260.

The native country of this is unknown; but Engler surmises that *M. karwinskyi*

(Schott in Œster. Bot. Zeitschr. 1859, p. 99, and Prodr. Aroid. p. 360) may be the same, and this was collected by Karwinski and Liebmann between Colipa and Papantla in Southern Mexico.

5. **Monstera friedrichsthaliana,** Schott in Œster. Bot. Wochenbl. 1854, et Prodr. Aroid. p. 360; Œrst. Præcurs. Fl. Centr.-Am. p. 62; Engler in DC. Monogr. Phanerog. ii. p. 259.

Guatemala, Niquinomo (*Friedrichsthal*); Costa Rica, near Aguacati (*Hoffmann*).

6. **Monstera pertusa,** de Vriese, Hort. Spaarn-Bergensis, 1839; Engler in DC. Monogr. Phanerog. ii. p. 261, et Mart. Fl. Bras. Aroid. p. 113, tt. 20 et 21 (varietates plures).

Dracontium pertusum, Linn. Sp. Pl. ed. 2, p. 1372; Mill. Ic. t. 296; Jacq. Hort. Schœnbr. ii. tt. 184 et 185.

Monstera adansonii, Schott, Meletem. i. p. 21.

Costa Rica, Alto de la Cruz (*Hoffmann*).—Colombia; Venezuela; Guiana; Brazil.

7. **Monstera punctulata,** Schott; Engler in DC. Monogr. Phanerog. ii. p 259.

Anadendron punctulatum, Schott, Prodr. Aroid. p. 393.

Mexico (fide *Schott*); Central America (*Warscewicz*, fide Klotzsch in Herb. Reg. Berol.).

8. **Monstera seemannii,** Schott in Œster. Bot. Zeitschr. 1859, p. 40, et Prodr. Aroid. p. 365; Engler in DC. Monogr. Phanerog. ii. p. 264.

Panama, Isle of Taboga (*Seemann*, 1568). Hb. Kew.

Engler suggests that this may be a form of *M. pertusa.*

Marcgravia paradoxa, Masters (Gard. Chron. 1877, viii. p. 13), from Central America, is a barren or juvenile state of some species of this genus.

12. DRACONTIUM.

Dracontium, Linn. Gen. Plant. n. 1029; Benth. et Hook. Gen. Plant. iii. p. 995.

An exclusively Tropical-American genus of about six species.

1. **Dracontium gigas,** Engler in DC. Monogr. Phanerog. ii. p. 284.

Godwinia gigas, Seem. Journ. Bot. 1869, p. 313, tt. 16 et 17; Gard. Chron. 1873, figg. 13 et 14; Bot. Mag. t. 6048; Fl. des Serres, xxi. tt. 2244–2245.

Nicaragua, mountains of Chontales, between the Javali Mine and the Quebrada de las Lajas (*Seemann*). Cultivated specimens only in the Kew Herbarium.

13. UROSPATHA.

Urospatha, Schott, Aroid. p. 3, tt. 7–10, et Gen. Aroid. t. 86; Benth. et Hook. Gen. Plant. iii. p. 996.

About ten species, restricted to Tropical America.

1. **Urospatha friedrichsthalii,** Schott, Aroid. p. 3, t. 7, et Prodr. Aroid. p. 407; Œrst. Præcurs. Fl. Centro-Am. p. 63; Engler in DC. Monogr. Phanerog. ii. p. 281.

NICARAGUA, San Juan (*Friedrichsthal*).

2. **Urospatha grandis,** Schott in Bonplandia, 1857, v. p. 128; Engler in DC. Monogr. Phanerog. ii. p. 281.

PANAMA, Chagres (*Fendler*, 434). Hb. Kew.

14. SPATHIPHYLLUM.

Spathiphyllum, Schott, Meletem. i. p. 22; Gen. Aroid. t. 93; Benth. et Hook. Gen. Plant. iii. p. 997.

Of this genus there are about twenty American species and two Malayan.

1. **Spathiphyllum atrovirens,** Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 427; Œrst. Præcurs. Fl. Centro-Am. p. 64; Engler in DC. Monogr. Phanerog. ii. p. 226.

COSTA RICA, Pedregal (*Wendland*).

2. **Spathiphyllum brevirostre,** Schott, Aroid. i. p. 2, et Prodr. Aroid. p. 426; Engler in DC. Monogr. Phanerog. ii. p. 226.

Hydrostachyon brevirostre, Liebm. Om Mexicos Aroideer, p. 15.

SOUTH MEXICO, Cuesta de Teotalcingo, Trapiche de la Concepcion, and various other localities in Oaxaca at 2500 to 5000 feet (*Liebmann*).

3. **Spathiphyllum cochlearispathum,** Engler in DC. Monogr. Phanerog. ii. p. 221.

Hydnostachyon cochlearispathum, Liebm. Om Mexicos Aroideer, p. 14.
Spathiphyllum liebmanni, Schott, Aroid. i. p. 2, et Prodr. Aroid. p. 433.
Spathiphyllum heliconiifolium, Schott, Aroid. i. p. 2, tt. 5 et 6.

SOUTH MEXICO, damp woods near Mirador (*Liebmann; Sartorius*), valley of Cordova (*Bourgeau*, 3261). Hb. Kew.

β. **longirostre,** Engler in DC. Monogr. Phanerog. ii. p. 221.

Hydnostachyon longirostre, Liebm. Om Mexicos Aroideer, p. 14.
Spathiphyllum longirostre, Schott, Prodr. Aroid. p. 434.

SOUTH MEXICO, Colipa (*Liebmann*).

4. **Spathiphyllum friedrichsthalii,** Schott, Aroid. i. p. 2, t. 4, et Prodr. Aroid. p. 430; Œrst. Præcurs. Fl. Centro-Am. p. 64.

α. **latifolia,** Engler in DC. Monogr. Phanerog. ii. p. 222; Schott in Œster. Bot. Wochenbl. 1857, p. 9, et Prodr. Aroid. p. 431.

Spathiphyllum lanceolatum, K. Koch in Berl. Allg. Gart. Zeit. 1857, p. 174; Schott, Prodr. Aroid. p. 435.
Massowia lanceolata, K. Koch ex Ender, Ind. Aroid. p. 52.

PANAMA, Chagres (*Fendler*, 426). Hb. Kew.

β. **angustifolium,** Engler in DC. Monogr. Phanerog. ii. p. 222.

Spathiphyllum friedrichsthalii, Schott, l. c.

NICARAGUA, San Juan (*Friedrichsthal*); PANAMA, without locality (*Wagner*).

We have not seen the latter form, and merely follow Engler in treating it as of the same species as *S. fendleri.*

5. **Spathiphyllum fulvovirens,** Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 427; Œrst. Præcurs. Fl. Centro-Am. p. 225; Engler in DC. Monogr. Phanerog. ii. p. 225.

COSTA RICA, Pedregal (*Wendland*).

6. **Spathiphyllum ortgiesii,** Regel, Gartenflora, 1870, p. 39, et 1872, p. 292, t. 738; Engler in DC. Monogr. Phanerog. ii. p. 225.

MEXICO (*Roezl*).

7. **Spathiphyllum phryniifolium,** Schott in Œster. Bot. Wochenbl. 1857, p. 159, et Prodr. Aroid. p. 432; Engler in DC. Monogr. Phanerog. ii. p. 223.

PANAMA, Chagres (*Fendler*, 425). Hb. Kew.

8. **Spathiphyllum wendlandii,** Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 432; Œrst. Præcurs. Fl. Centro-Am. p. 64; Engler in DC. Monogr. Phanerog. ii. p. 221.

COSTA RICA (*Wendland*).

9. **Spathiphyllum,** sp.

GUATEMALA, Cerro de Zunil, Las Nubes 4350 feet (*Salvin*). Hb. Kew.

15. ANTHURIUM.

Anthurium, Schott in Wien. Zeitschr. iii. p. 828, et Ic. Aroid. tt. 11–20, et Gen. Aroid. t. 94; Benth. et Hook. Gen. Plant. iii. p. 998.

An exclusively Tropical-American genus, of which there are at least 160 well-defined species.

1. **Anthurium æmulum,** Schott in Bonplandia, 1859, p. 165, et Prodr. Aroid. p. 551; Engler in DC. Monogr. Phanerog. ii. p. 206.

SOUTH MEXICO, Colipa (*Liebmann*).

2. **Anthurium agnatum,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 478; Œrst. Præcurs. Fl. Centro-Am. p. 69; Engler in DC. Monogr. Phanerog. ii. p. 146.

NICARAGUA (*Œrsted*).

3. **Anthurium andicola,** Liebm. Om Mexicos Aroideer, p. 12; Schott, Prodr. Aroid. p. 510; Engler in DC. Monogr. Phanerog. ii. p. 169.

Anthurium cucullatum, K. Koch et Sello in Ind. Sem. Hort. Berol. 1853, p. 16; Schott, Prodr. Aroid. p. 507; Regel, Gartenflora, 1871, t. 702.

SOUTH MEXICO, Santa Maria Alpatlahua 7500 feet (*Liebmann*). Hb. Kew.

4. **Anthurium bakeri,** Hook. f. in Bot. Mag. t. 6261; Engler in DC. Monogr. Phanerog. ii. p. 122.

Costa Rica. Imported and cultivated by Mr. W. Bull, of Chelsea. Hb. Kew.

5. **Anthurium bombacifolium,** Schott, Prodr. Aroid. p. 552; Œrst. Præcurs. Fl. Centro-Am. p. 72; Engler in DC. Monogr. Phanerog. ii. p. 201.

Costa Rica (*Hoffmann*).

6. **Anthurium brachygonatum,** Schott, Prodr. Aroid. p. 468; Engler in DC. Monogr. Phanerog. ii. p. 140, et in Mart. Fl. Bras. Aroid. p. 60.

Mexico (fide *Schott*).

In the 'Flora Brasiliensis' Engler refers Wright's 601 ('Plantæ Cubenses') to this species; but in the 'Monogr. Phanerog.' he refers the same number to *Anthurium recusatum*, Schott.

7. **Anthurium consobrinum,** Schott in Œster. Bot. Wochenbl. 1855, p. 66, et Prodr. Aroid. p. 452; Œrst. Præcurs. Fl. Centro-Am. p. 68; Engler in DC. Monogr. Phanerog. ii. p. 148.

Nicaragua (*Friedrichsthal*).

8. **Anthurium cordifolium,** Kunth, Enum. Pl. iii. p. 76; Schott, Prodr. Aroid. p. 515; Refug. Bot. t. 279; Engler in DC. Monogr. Phanerog. ii. p. 171.

Costa Rica (*Œrsted*).—Jamaica; St. Christopher; Santa Cruz; Guadaloupe.

9. **Anthurium crassinervium,** Schott, Meletem. i. p. 22; Prodr. Aroid. p. 472, et Ic. Aroid. tt. 12–14; Kunth, Enum. Pl. iii. p. 74; Engler in DC. Monogr. Phanerog. ii. p. 142.

Pothos crassinervia, Jacq. Ic. Pl. Rar. iii. p. 609, Coll. iv. p. 122, et Fragm. t. 1.

Panama (*Wagner*). Cultivated specimens in the Kew Herbarium.

10. **Anthurium cuspidifolium,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 446; Œrst. Præcurs. Fl. Centro-Am. p. 114; Engler in DC. Monogr. Phanerog. ii. p. 67.

Costa Rica (*Œrsted*).

11. **Anthurium flexile,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 443; Œrst. Præcurs. Fl. Centro-Am. p. 66; Engler in DC. Monogr. Phanerog. ii. p. 113.

Costa Rica, Pedregal (*Wendland*).

12. **Anthurium formosum,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 519; Œrst. Præcurs. Fl. Centro-Am. p. 70; Engler in DC. Monogr. Phanerog. ii. p. 181.

Costa Rica, Naranjo (*Wendland*).

13. **Anthurium fraternum,** Schott in Œster. Bot. Wochenbl. 1857, p. 293, et Prodr. Aroid. p. 503. (Tab. XCVII.)

Anthurium quindiuense, Schott, ll. cc., fide Engler in DC. Monogr. Phanerog. ii. p. 179 (sub *A. lindeniano*).

Guatemala, Barranca Honda, Volcan de Fuego at 3800 feet (*Salvin*).—Venezuela; Colombia. Hb. Kew.

14. **Anthurium friedrichsthalii,** Schott in Œster. Bot. Wochenbl. 1855, p. 65, et Prodr. Aroid. p. 447; Œrst. Prærcurs. Fl. Centro-Am. p. 68; Engler in DC. Monogr. Phanerog. ii. p. 118 (sub *A. rudgeano*).

Guatemala (*Friedrichsthal*). Cultivated specimens in the Kew Herbarium.

15. **Anthurium hoffmannii,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 509; Engler in DC. Monogr. Phanerog. ii. p. 179.

Anthurium margaritaceum, Baker in Refug. Bot. t. 280.

Costa Rica, at Uruca, in the marshes of the river Verilla, near San José (*Hoffmann*).

16. **Anthurium holtonianum,** Schott in Œster. Bot. Zeitschr. 1858, p. 350, et Prodr. Aroid. p. 544; Engler in DC. Monogr. Phanerog. ii. p. 199.

Panama, Chagres (*Fendler*, 428).—Colombia. Hb. Kew.

17. **Anthurium karwinskii,** Schott, Prodr. Aroid. p. 522; Engler in DC. Monogr. Phanerog. ii. p. 206.

South Mexico, Colipa (*Karwinski*).

18. **Anthurium lancifolium,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 480; Œrst. Prærcurs. Fl. Centro-Am. p. 69; Engler in DC. Monogr. Phanerog. ii. p. 121.

Costa Rica, Volcan de Turrialba (*Wendland*).

19. **Anthurium leuconeurum,** Lemaire in Ill. Hort. t. 314; Engler in DC. Monogr. Phanerog. ii. p. 168.

Mexico or Central America?

20. **Anthurium liebmannii,** Schott in Bonplandia, 1859, p. 165, et Prodr. Aroid. p. 519; Engler in DC. Monogr. Phanerog. ii. p. 183.

South Mexico, in Oaxaca at 4800 feet (*Liebmann*).

21. **Anthurium mexicanum,** Engler in DC. Monogr. Phanerog. ii. p. 105.

South Mexico, Orizaba (*Müller*, 993).

22. **Anthurium** (§ **Cardiophyllum**) **montanum,** Hemsl. Diag. Pl. Nov. p. 36. (Tab. XCVIII.)

Scandens, foliis longe petiolatis elongato-cordiformibus sursum gradatim attenuatis, auriculis semi-orbicularibus, sinu quam auriculæ angustiore rotundato, auricularum venis 2 excurrentibus reliquis (utrinque 9–11) parum prominentibus in pseudoneurum continuum unitis, pedunculis foliis subæquilongis, spatha quam spadix longiore basi dilatata amplexa.

Epiphytum scandens, caudice supra crassiusculo. *Folia* longe petiolata, vix coriacea, lamina elongato-cordiformi, 6–8-pollicari, sursum gradatim attenuata, vix acuta, auriculis semiorbicularibus, sinu quam auriculæ angustiore rotundato, ore aperto, petiolo quam lamina paulum longiore; auricularum venis 2, arcuatim excurrentibus, reliquis (utrinque 9–11) parum prominentibus in pseudoneurum continuum junctis. *Pedunculi* foliis subæquilongi. *Spatha* luteo-viridis, ovato-lanceolata, circiter tripollicaris, patens, basi dilatata, amplexa. *Spadix* luteo-viridis, breviter stipitatus, spatha brevior.

Guatemala, Volcan de Fuego, ridge above Calderas at 8300 feet (*Salvin*). Hb. Kew.

23. **Anthurium obtusilobum,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 508; Œrst. Præcurs. Fl. Centro-Am. p. 70; Engler in DC. Monogr. Phanerog. ii. p. 165.

Costa Rica, San Miguel (*Wendland*).

24. **Anthurium ochranthum,** K. Koch in Ind. Sem. Hort. Berol. 1853, Append. p. 16; Schott, Prodr. Aroid. p. 532; Œrst. Præcurs. Fl. Centro-Am. p. 71; Engler in DC. Monogr. Phanerog. ii. p. 187.

Anthurium lapathifolium, Schott in Œster. Bot. Wochenbl. 1857, p. 309, et Prodr. Aroid. p. 533.

Costa Rica (*Wendland*); Panama, Chagres (*Fendler*, 429). Hb. Kew.

25. **Anthurium œrstedianum,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 447; Œrst. Præcurs. Fl. Centro-Am. p. 67; Engler in DC. Monogr. Phanerog. ii. p. 114.

Costa Rica, Naranjo (*Œrsted*).

26. **Anthurium pallens,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 443; Œrst. Præcurs. Fl. Centro-Am. p. 65; Engler in DC. Monogr. Phanerog. ii. p. 111.

Costa Rica, Desengaño 7800 feet (*Wendland*).

27. **Anthurium panduræforme,** Schott, Prodr. Aroid. p. 536; Engler in DC. Monogr. Phanerog. ii. p. 189.

Anthurium panduratum, Schott in Œster. Bot. Zeitschr. 1858, p. 182; Œrst. Præcurs. Fl. Centro-Am. p. 190.

Costa Rica, Cartago (*Œrsted*), without locality (*Wendland*).

28. **Anthurium parvispathum,** Hemsl. n. sp.

Species affinitatis *Anthurii chamissonis,* a quo differt foliis basi rotundatis subtus pallidis, petiolis longioribus, spadice sessili.

Caudex, ut videtur, abbreviatus. *Folia* longiuscule petiolata, subcoriacea, oblongo-lanceolata, absque petiolo 12–15 poll. longa, usque $2\frac{3}{4}$ poll. lata, basi rotundata, apice vix acuta, supra nitida venis immersis, subtus pallidiora, punctulata, nervis lateralibus primariis elevatis distantibus marginem versus inter se anastomosantibus, nervo collectivo a margine 3–4 lineas remoto interdum interrupto; petiolus crassiusculus, 8–10 poll. longus, a latere compressus, supra profundiuscule canaliculatus, marginibus subtilibus, geniculo parvo brevi. *Pedunculus* quam folia paullo brevior, graciliusculus, in siccis sulcatus. *Spatha* ovato-lanceolata, $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa,

apice cuspidata, basi breviter amplectens. *Spadix* sessilis, cylindricus, $1\frac{1}{2}$–$1\frac{3}{4}$ poll. longus, floribus parvis. *Fructus* deest.

GUATEMALA, near Santa Rosa in Vera Paz (*Godman & Salvin*). Hb. Kew.

29. **Anthurium pedatoradiatum,** Schott in Bonplandia, 1859, p. 337, et Prodr. Aroid. p. 539; Engler in DC. Monogr. Phanerog. ii. p. 193.

Anthurium pedatifidum, Regel et Linden, Gartenflora, 1866, p. 66, t. 501.

MEXICO (fide *Schott*). Cultivated specimens only in the Kew Herbarium.

30. **Anthurium podophyllum,** Kunth, Enum. Pl. iii. p. 80; Schott, Prodr. Aroid. p. 541; Engler, in DC. Monogr. Phanerog. ii. p. 195.

Pothos podophyllus, Ch. et Schl. in Linnæa, vi. p. 22.

Pothos laciniatus, Mart. et Gal. in Bull. Acad. Brux. x. (reprint, p. 12), fide Schott.

Anthurium pseudopodophyllum, Schott in Bonplandia, 1859, p. 338, et Prodr. Aroid. p. 540.

Anthurium polytomum, Schott in Bonplandia, 1859, p. 337, et Prodr. Aroid. p. 542.

Anthurium ghiesbrechtii, Linden; Schott, Prodr. Aroid. p. 538.

SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), rocks of Mirador and Zacuapan at 3000 feet (*Galeotti*, 6094), in the same localities (*Liebmann*). Hb. Kew.

31. **Anthurium porrectum,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 443; Engler in DC. Monogr. Phanerog. ii. p. 112.

COSTA RICA, Desengaño at 7800 feet (*Wendland*).

Var. **microspadix,** Engler in DC. Monogr. Phanerog. ii. p. 112; Schott, Prodr. Aroid. p. 444 (species).

COSTA RICA, Naranjo (*Œrsted*).

32. **Anthurium protensum,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 465; Engler in DC. Monogr. Phanerog. ii. p. 133.

CENTRAL AMERICA (*Œrsted*).

33. **Anthurium rigidulum,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 438; Œrst. Præcurs. Fl. Centro-Am. p. 65; Engler in DC. Monogr. Phanerog. ii. p. 108, excl. synon.

COSTA RICA, near Cartago (*Œrsted*), on trees near San José (*Hoffmann*), without locality (*Endres*).—COLOMBIA. Hb. Kew.

34. **Anthurium (Pachyneurium) salviniæ,** Hemsl. Diag. Pl. Nov. p. 36. (Tab. XCIX.)

Acaule, foliis petiolatis coriaceis oblanceolato-oblongis basin versus vix attenuatis basi rotundatis, venis utrinque circiter 11 patentissimis arcuatim in marginem excurrentibus vel superioribus in pseudoneurum junctis, pedunculis teretibus graciliusculis quam folia longioribus, spatha lanceolata quam spadix longiore.

Herba acaulis, caudice radices aerias carnosas emittente. *Folia* petiolata, coriacea, epunctata, oblanceolato-oblonga, 1–2 pedalia vel ultra, deorsum leviter tantum attenuata, basi late rotundata, apice acuminata, vix acuta, costa crassa, subtus basin versus acuta, venis lateralibus utrinque circiter 11 patentissimis arcuatim in marginem excurrentibus vel supremis in pseudo-

neurum margine approximatum junctis, petiolo crasso 2–3-pollicari, geniculo brevi. *Pedunculi* teretes, graciliusculi, foliis longiores. *Spatha* brunneo-purpurea, nitida, anguste lanceolata, spadice lilacino paulum longior, circiter 6-pollicaris.

GUATEMALA, Volcan de Fuego 3800 feet (*Salvin*). Hb. Kew.

35. **Anthurium scandens,** Engler in Mart. Fl. Bras. Aroid. p. 78, et in DC. Monogr. Phanerog. ii. p. 106.

Dracontium scandens, Aubl. Pl. Guian. ii. p. 386.
Dracontium repens, Descourt. Fl. Antill. vii. t. 499.
Pothos violaceus, Swartz, p. 32, et Fl. Ind. Occ. i. p. 270.
Anthurium violaceum, Schott, Meletem. p. 22; Kunth, Enum. Pl. iii. p. 67.

α. **dolosum,** Engler in DC. Monogr. Phanerog. ii. p. 107; Schott in Œster. Bot. Zeitschr. 1858, p. 179, et Prodr. Aroid. p. 437 (species); Œrst. Præcurs. Fl. Centro-Am. p. 65.

GUATEMALA, between San Pedro and Santa Lucia (*Wendland*).

Engler refers Bernoulli's no. 338, from Mazatenango, to this variety; but, judging from imperfect material, it looks more like ordinary *A. violaceum.*

β. **violaceum,** Engler in DC. Monogr. Phanerog. ii. p. 107; Schott, Prodr. Aroid. p. 437 (species); Refug. Bot. t. 257.

Pothos violaceus, H. B. K. Nov. Gen. et Sp. i. p. 76, t. 19; Hook. Exot. Fl. t. 55; Lodd. Bot. Cab. t. 632.

SOUTH MEXICO, Mirador (*Liebmann*), region of Orizaba (*Bourgeau*, 3376).—JAMAICA; BRAZIL. Hb. Kew.

γ. **leucocarpum,** Engler in DC. Monogr. Phanerog. ii. p. 107; Schott, Prodr. Aroid. p. 437 (species).

Anthurium violaceum, β. forma angustifolia, Kunth, Enum. Pl. iii. p. 68.

SOUTH MEXICO, near Jalapa at 3000 feet (*Galeotti*, 6052), Vera Cruz to Orizaba (*Müller*, 1132).—SAN DOMINGO and PORTO RICO. Hb. Kew.

36. **Anthurium scherzerianum,** Schott in Œster. Bot. Wochenbl. 1857, p. 53, et Prodr. Aroid. p. 430; Regel, Gartenfl. 1865, t. 482; Fl. des Serres, t. 1794; Bot. Mag. t. 5319; Œrst. Præcurs. Centro-Am. p. 65; Engler in DC. Monogr. Phanerog. ii. p. 117 (cum var. *williamsii*).

GUATEMALA (*Scherzer*); COSTA RICA, Aguacate (*Hoffmann*).

Cultivated specimens in the Kew Herbarium.

37. **Anthurium schlechtendalii,** Kunth, Enum. Pl. iii. p. 75; Schott, Prodr. Aroid. p. 476; Engler in DC. Monogr. Phanerog. ii. p. 142.

Anthurium mexicanum, Liebm. Om Mexicos Aroideer, p. 11; Schott, Prodr. Aroid. p. 470.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 1335), valley of Cordova (*Bourgeau*, 1787), Zacuapan and Trapiche de la Concepcion 3000 feet (*Liebmann*). Hb. Kew.

38. **Anthurium spectabile,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 469; Engler in DC. Monogr. Phanerog. ii. p. 144; Œrst. Præcurs. Fl. Centro-Am. p. 69.

Costa Rica, Volcan de Turrialba (*Wendland*).

39. **Anthurium subcordatum,** Schott in Œster. Bot. Zeitschr. 1858, p. 181, et Prodr. Aroid. p. 489; Engler in DC. Monogr. Phanerog. ii. p. 156.

Guatemala (*Wendland*).

40. **Anthurium subsignatum,** Schott in Bonplandia, ix. p. 368; Engler in DC. Monogr. Phanerog. ii. p. 191.

Costa Rica, Pedregal (*Wendland*). Cultivated specimens in the Kew Herbarium.

41. **Anthurium tapinostachyum,** Schott in Œster. Bot. Zeitschr. 1858, p. 180, et Prodr. Aroid. p. 445; Œrst. Præcurs. Fl. Centro-Am. p. 67; Engler in DC. Monogr. Phanerog. ii. p. 115.

Costa Rica, near Candelaria (*Hoffmann*), Naranjo (*Œrsted*).

42. **Anthurium umbrosum,** Liebm. Om Mexicos Aroideer, p. 11; Schott, Prodr. Aroid. p. 150; Engler in DC. Monogr. Phanerog. p. 170.

South Mexico, Cuesta de Teotalcingo, Oaxaca, 5000 feet (*Liebmann*).

43. **Anthurium wendlandii,** Schott in Œster. Bot. Zeitschr. 1858, p. 182, et Prodr. Aroid. p. 544; Œrst. Præcurs. Fl. Centro-Am. p. 72; Engler in DC. Prodr. Aroid. p. 198.

Costa Rica, San Miguel (*Wendland*).

There are several unnamed and probably, in part at least, undescribed species of *Anthurium* in the Kew Herbarium, chiefly from Chontales in Nicaragua.

Order CLV. LEMNACEÆ.

Lemnaceæ, Benth. et Hook. Gen. Pl. iii. p. 1000; Hegelm. Die Lemnaceen.

Very small, or even minute, floating or submerged aquatic herbs, spread over all temperate and tropical regions. Hegelmaier distinguishes three genera, namely *Wolffia*, *Lemna*, and *Spirodela*, while Bentham and Hooker treat the two last as sections of one. There are twenty-one species.

1. LEMNA.

Lemna, Linn. Gen. Plant. n. 1038; Benth. et Hook. Gen. Plant. iii. p. 1001.

Nine species, inhabiting freshwater in all temperate and tropical regions.

1. **Lemna gibba,** Linn. Sp. Pl. ed. 1, p. 970; Hegelm. Lemn. p. 145, tt. 11, 12, 13. figg. 1–9.

Telmatophace gibba, Schleid. in Linnæa, xiii. p. 391; Kunth, Enum. Pl. iii. p. 6.

South Mexico, canals near Mexico and Tacubaya (*Bourgeau*, 64), Vera Cruz to Orizaba (*Müller*), without locality (*Hahn*).—Europe; Asia?; Africa; Australia; and widely dispersed in America. Hb. Kew.

This was collected intermixed with *Lemna valdiviana* var. *minima*, and *Wolffia columbiana*, *W. gladiata*, and *W. lingulata*.

2. **Lemna minor,** Linn. Sp. Pl. ed, 1, p. 970; Hegelm. Lemn. p. 149, tt. 9, 10; Kunth, Enum. Pl. iii. p. 4; Liebm. Om Mexicos Aroideer, p. 3.

Lemna minuta, H. B. K. Nov. Gen. et Sp. i. p. 372; Schleid. in Linnæa, xiii. p. 390.

South Mexico, Chinantla, Puebla at 7000 feet (*Liebmann*), without locality (*Hahn*). —This species is spread over nearly the whole area of the Order. Hb. Kew.

The Mexican specimens were associated with *Wolffia gladiata*.

3. **Lemna paucicostata,** Hegelm. Lemn. p. 139, t. 8.

Lemna minor, auct. plur. (non Linn.), ex grat. Griffith Notul. et Hegelm. in Seem. Journ. Bot. 1865, p. 112.

Guatemala (*Friedrichsthal*).—Missouri to the West Indies and Colombia, and widely dispersed in Asia; also occurring in Africa and the Fiji Islands.

4. **Lemna polyrhiza,** Linn. Sp. Pl. ed. 1, p. 970; Wolff, Monogr. p. 28, tt. 16–21.

Spirodela polyrhiza, Schleid. in Linnæa, xiii. p. 392; Kunth, Enum. Pl. iii. p. 7; Hegelm. Lemn. p. 151, tt. 13 (figg. 10–16), 14 et 15.

South Mexico, without locality, associated with *L. valdiviana* var. *minima* (*Hahn*).—Europe, especially central; Madeira; Egypt; Asia; Australia; North America; West Indies; Venezuela. Hb. Kew.

5. **Lemna trisulca,** Linn. Sp. Pl. ed. 1, p. 790; Kunth, Enum. Pl. iii. p. 5; Schleid. in Linnæa, xiii. p. 391; Hegelm. Lemn. p. 134, tt. 5 et 6. figg. 1–18.

South Mexico, without locality, growing with *Wolffia gladiata* (*Hahn*), near the city of Mexico (*Berlandier*); Nicaragua, Chontales (*Seemann*).—Europe; Algeria; Mauritius; Asia; Australia; North America. Hb. Kew.

6. **Lemna valdiviana,** Philippi in Linnæa, xxxiii. p. 239; Hegelm. Lemn. t. 7. figg. 1–8.

New Jersey to New Mexico.—South Mexico, without locality (*Hahn*).—Bolivia and Valdivia in South America. Hb. Kew.

Hahn's Mexican specimens are intermixed with *Wolffia gladiata*, *W. lingulata*, and *W. columbiana*.

γ. ? **minima,** Hegelm. Lemn. p. 138.

California.—South Mexico, without locality (*Hahn*).—Ecuador; Chili. Hb. Kew.

2. WOLFFIA.

Wolffia, Horkel; Schleid. in Linnæa, xiii. p. 389; Benth. et Hook. Gen. Plant. iii. p. 1001.

Twelve species are defined by Hegelmaier; they inhabit Europe, India, Tropical Africa, and Tropical and Temperate America. Some of them are so small as to be almost microscopic.

1. **Wolffia columbiana,** Karst. Botan. Unters. i. (1865), p. 103; Hegelm. Lemn. p. 122, t. 1. figg. 1–13.

South Mexico, near the city of Mexico (*Hahn*).—Colombia; Venezuela. Hb. Kew.

2. **Wolffia lingulata,** Hegelm. Lemn. p. 132, t. 4. figg. 31, 32.

South Mexico, in the vicinity of the city of Mexico (*Hahn*). Hb. Kew.

This was found growing with *Wolffia gladiata*, *Lemna minor*, *L. valdiviana*, and *Azolla caroliniana*.

In the Kew Herbarium is a specimen labelled by Hegelmaier "var. *minor* cum Ricciæ nutanti adhærens."

3. **Wolffia gladiata,** Hegelm. Lemn. p. 133, t. 3. fig. 24.

South Mexico, in the neighbourhood of the capital, growing with *W. gladiata* (*Hahn*). Hb. Kew.

[The Triurideæ, consisting of two genera and about sixteen species, are apparently not represented within our limits, though they range from Brazil to Venezuela. Elsewhere the Order is only at home in Tropical Asia.]

Order CLVI. ALISMACEÆ.

Alismaceæ, Benth. et Hook. Gen. Plant. iii. p. 1003.

Aquatic and marsh herbaceous plants, inhabiting all save the frigid regions. Including the Butomeæ, regarded by some botanists as an independent Order, there are twelve genera and about sixty species.

1. ALISMA.

Alisma, Linn. Gen. Plant. n. 460; Benth. et Hook. Gen. Plant. iii. p. 1004.

Of this genus there are ten species, having nearly the same range as the Order; *A. plantago* is found in Europe, Asia, Africa, America, and Australia, but it is not known from within our limits.

1. **Alisma tenellum,** Mart. in Rœm. et Schult. Syst. Veg. vii. p. 1600; Kunth, Enum. Pl. iii. p. 149; Seubert in Mart. Fl. Bras. iii. 1, p. 105, t. 13. fig. 2.

Echinodorus parvulus, Engelm.; A. Grey, Man. Bot. Northern U. S. 1865, p. 492.

Echinodorus subulatus, Engelm. in A. Gray's Manual, ed. 1, p. 460, fide Micheli.
Echinodorus tenellus, Buch. Ind. Crit. p. 21; Micheli in DC. Monogr. Phanerog. iii. p. 47.

Massachusetts and Illinois southward.—Mexico, Vera Cruz (*Müller*, 2142), Orizaba (*Weber*).—Colombia and Venezuela to Guiana and Uruguay. Hb. Kew.

2. SAGITTARIA.

Sagittaria, Linn. Gen. Plant. n. 1067; Benth. et Hook. Gen. Plant. iii. p. 1006.

About fifteen species, generally diffused in the temperate and tropical regions of both hemispheres.

1. **Sagittaria graminea**, Michx. Fl. Bor.-Am. ii. p. 190; Pursh, Fl. Am. Sept. ii. p. 397; Micheli in DC. Monogr. Phanerog. iii. p. 70.
Sagittaria acutifolia, Pursh, Fl. Am. Sept. ii. p. 397.
Sagittaria stolonifera, Engelm. et A. Gr. Pl. Lindheim. p. 26.
*Sagittaria pursh*ii, Kunth, Enum. Pl. iii. p. 160.

Canada to Texas.—Mexico (*Karwinski*, in herb. Petrop. fide Micheli).

2. **Sagittaria guyanensis**, H. B. K. Nov. Gen. et Sp. i. p. 250; Kunth, Enum. Pl. iii. p. 161; Ch. et Schl. in Linnæa, vi. p. 42.
Lophiocarpus guyanensis, Micheli in DC. Monogr. Phanerog. iii. p. 62.
Sagittaria echinocarpa, Mart. Amœnit. Bot. Monac. p. 6, t. 3.
Alisma echinocarpa, Seubert in Mart. Fl. Bras. iii. 1, p. 105.
Echinodorus guyanensis, Griseb. Fl. Brit. W. Ind. p. 505.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), near Vera Cruz (*Sartorius*); Panama (*Seemann*, 186; *S. Hayes*, 414).—Common in Tropical South America; also occurring in the West Indies, and widely spread in Tropical Asia and Africa. Hb. Kew.

3. **Sagittaria lancifolia**, Linn. Amœn. Acad. v. p. 409; Kunth, Enum. Pl. iii. p. 158; Griseb. Fl. Brit. W. Ind. p. 505; Bot. Mag. t. 1792; Micheli in DC. Monogr. Phanerog. iii. p. 72 (varietates plures).
Sagittaria plantaginifolia, Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 8).
Sagittaria ovata, Redouté, Liliac. t. 411.
Sagittaria angustifolia, Lindl. Bot. Reg. t. 1141.
Sagittaria sellowiana, Kunth, Enum. Pl. iii. p. 159.

Kentucky and Virginia southward.—South Mexico, Oaxaca (*Galeotti*, 4892), Vera Cruz (*Gouin*); Guatemala (*Godman & Salvin*); Nicaragua, Greytown (*Tate*).—Venezuela to Guiana and Brazil and in the West Indies. Hb. Kew.

4. **Sagittaria macrophylla**, Zucc. in Abhandl. K. Bayr. Akad. 1832, p. 289; Schl. in Linnæa, xviii. p. 432; Micheli in DC. Monogr. Phanerog. iii. p. 71.
Sagittaria mexicana, Steud. Nomen. Bot.

Louisiana.—Mexico, canal near the city of Mexico (*Bourgeau*, 242), without localities (*Berlandier*; *Schaffner*; *Karwinski*). Hb. Kew.

5. **Sagittaria sagittifolia,** Linn. Sp. Pl. ed. 1, p. 993; Kunth, Enum. Pl. iii. p. 156; Micheli in DC. Monogr. Phanerog. iii. p. 66.

Var. **mexicana,** Mart. et Gal. in Bull. Acad. Brux. ix. (reprint, p. 8); Micheli, loc. cit. p. 69.

TEXAS.—SOUTH MEXICO, lakes near Oaxaca at 5000 feet (*Galeotti*, 4891). Hb. Kew.

This species has a very wide range in Europe, Asia, and North America.

3. ECHINODORUS.

Echinodorus, L. C. Rich. in Mém. Mus. Par. i. p. 365 (nomen tantum); Benth. et Hook. Gen. Plant. iii. p. 1006.

Fourteen species are described from Tropical and Temperate North America, and one doubtful one from Senegambia.

1. **Echinodorus bracteatus,** Micheli in DC. Monogr. Phanerog. iii. p. 59.

PANAMA, Chagres (*Fendler*, 435), Empire station (*S. Hayes*, 432). Hb. Kew.

Founded upon the two specimens cited in the Kew Herbarium.

2. **Echinodorus ellipticus,** Micheli in DC. Monogr. Phanerog. iii. p. 51 (varietates plures).

Alisma ellipticum, Mart. in Rœm. et Schult. Syst. Veg. vii. p. 1607; Kunth, Enum. Pl. iii. p. 153; Seubert in Mart. Fl. Bras. iii. 1, p. 107, t. 13. fig. 4.
Alisma andrieuxii, Hook. et Arn. Bot. Beechey's Voy. p. 311.
Alisma pubescens, Mart. in Rœm. et Schult. Syst. Veg. vii. p. 1608.

SOUTH MEXICO, around Tehuantepec, Oaxaca (*Andrieux*, 91); NICARAGUA, San Nicolas (*Tate*).—Southward to CENTRAL BRAZIL. Hb. Kew.

3. **Echinodorus macrophyllus,** Micheli in DC. Monogr. Phanerog. iii. p. 50.

Alisma macrophyllum, Kunth, Enum. Pl. iii. p. 151; Seubert in Mart. Fl. Bras. iii. 1, p. 107.
Alisma cordifolium, Linn. Sp. Pl. ed. 3, p. 487, pro parte.
Echinodorus muricatus, Griseb. in Bonplandia, 1858, vii. p. 11.

PANAMA (*Duchassaing*).—GUIANA; BRAZIL; CAYENNE.

Micheli treats the Panama plant as a distinct variety.

4. **Echinodorus radicans,** Engelm. in A. Gr. Man. Bot. Northern U. S. ed 5, p. 492; Micheli in DC. Monogr. Phanerog. iii. p. 55.

Sagittaria radicans, Nutt. in Trans. Amer. Phil. Soc. 1837, v. p. 159.

ILLINOIS to LOUISIANA and TEXAS.—SOUTH MEXICO, near Vera Cruz (*Galeotti*), without locality (*Karwinski*).

5. **Echinodorus virgatus,** Micheli in DC. Monogr. Phanerog. iii. p. 54.

Alisma virgatum, Hook. et Arn. Bot. Beechey's Voy. p. 311.

SOUTH MEXICO, near the city of Mexico (*Beechey*). Hb. Kew.

4. LIMNOCHARIS.

Limnocharis, Humb. et Bonpl. Pl. Æquin. i. p. 116, t. 34; Benth. et Hook. Gen. Plant. iii. p. 1009.

An exclusively Tropical-American genus, of three or four species.

1. **Limnocharis flava,** Buch. Ind. Crit. Butom. p. 4; Micheli in DC. Monogr. Phanerog. iii. p. 89.

Alisma flavum, Linn. Sp. Pl. ed. 2, p. 486.

Limnocharis emarginata, Humb. et Bonpl. Pl. Æquin. i. p. 116, t. 34; H. B. K. Nov. Gen. et Sp. i. p. 248.

Limnocharis plumieri, L. C. Rich. Mém. Mus. Par. i. pp. 370 et 374, tt. 19 et 20; Bot. Mag. t. 2525; Kunth, Enum. Pl. iii. p. 167.

Limnocharis laforesti, Duchass. ex Griseb. in Bonplandia, 1858, vi. p. 11.

Guatemala (hb. Vindob. ex *Micheli*); Nicaragua, neighbourhood of Granada (*Lévy*, 73); Panama (*Seemann*, 183, 184; *S. Hayes*, 417).—Colombia to Peru, Guiana, and Brazil.

Order CLVII. NAIADACEÆ.

Naiadaceæ, Benth. et Hook. Gen. Plant. iii. p. 1009.

As limited by Bentham and Hooker this Order includes several groups, some of which have been regarded as independent orders by various botanists and variously combined by others. They are:—Juncagineæ, Aponogetoneæ, Potameæ, Posidonieæ, Zannichellieæ, Zostereæ, Naiadeæ, and Cymodoceæ, ranking as tribes in the 'Genera Plantarum.' There are sixteen genera, comprising about 120 species, all herbaceous and mostly aquatic or marsh-plants, some of them inhabiting salt water. The Order is represented all over the world; and probably several genera, besides those of which we have seen specimens, exist within our limits, though they do not appear in any of our collections—such, for instance, as *Ruppia*, *Zannichellia*, and *Zostera*.

1. TRIGLOCHIN.

Triglochin, Linn. Gen. Plant. n. 453; Benth. et Hook. Gen. Plant. iii. p. 1012.

About twelve species, diffused over nearly all temperate and cold regions, and in places extending into subtropical regions.

1. **Triglochin maritimum,** Linn. Sp. Pl. ed. 1, p. 105; Kunth, Enum. Pl. iii. p. 145; Lam. Ill. t. 270; Micheli in DC. Monogr. Phanerog. iii. p. 105.

Triglochin mexicanum, H. B. K. Nov. Gen. et Sp. i. p. 244.

Arctic Regions southward.—South Mexico, between Lake San Cristofer and Carpio at about 7000 feet (*Humboldt & Bonpland*).—Patagonia and Fuegia; all over Europe and almost everywhere in Temperate Asia. Hb. Kew.

We have seen no Mexican specimens of this plant.

2. POTAMOGETON.

Potamogeton, Linn. Gen. Plant. n. 174; Benth. et Hook. Gen. Plant. iii. p. 1014.

Bentham and Hooker estimate the number of species at about fifty, independently of many subspecies and varieties regarded as species by other botanists. The genus is diffused throughout Temperate regions, and less commonly in the Tropics.

1. **Potamogeton angustissimum,** H. B. K. Nov. Gen. et Sp. i. p. 370; Kunth, Enum. Pl. iii. p. 138.

South Mexico, between the Puerto de Andaracuas and Valladolid, Michoacan at 5500 feet (*Humboldt & Bonpland*).

There is a Mexican specimen in the Kew Herbarium, collected by Schaffner, and named *P. angustifolium*, H. B. K., by him, which may be this species.

2. **Potamogeton hybridus,** Michx. Fl. Am.-Bor. i. p. 101; Ch. et Schl. in Linnæa, ii. p. 208, t. 5. fig. 17; Kunth, Enum. Pl. iii. p. 132; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 486; S. Wats. in Proc. Am. Acad. xviii. p. 169.

Canada to Texas.—North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 856), near Morales (*Schaffner*, 549). Hb. Kew.

3. **Potamogeton liebmanni,** Buchenau in Abhandl. Naturw. Verein, Bremen, iii. 1873, p. 349.

South Mexico, Pital (*Liebmann*).

4. **Potamogeton lonchites,** Tuckerman in Am. Journ. Sc. & Arts, vi. 1848, p. 226; Walp. Ann. iii. p. 505; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 486; S. Wats. Bot. Calif. ii. p. 196.

New England to Illinois and southward.—South Mexico, near Tacubaya (*Schaffner; Bourgeau*, 901), Jalapa (*Galeotti*). Hb. Kew.

5. **Potamogeton lucens,** Linn. Sp. Pl. ed. 1, p. 126; Kunth, Enum. Pl. iii. p. 132; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 487; S. Wats. Bot. Calif. ii. p. 196; Griseb. Fl. Brit. W. Ind. p. 506.

North America.—Guatemala, Atitlan, near San Lucas (*Bernoulli*, 598).—West Indies; Europe; North Africa; North Asia; North-west India. Hb. Kew.

6. **Potamogeton natans,** Linn. Sp. Pl. ed. 1, p. 126; Kunth, Enum. Pl. iii. p. 127; S. Wats. Bot. Calif. ii. p. 195, et in Proc. Am. Acad. xviii. p. 169; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 484.

North America.—North Mexico, San Luis Potosi (*Schaffner*, 535), Zacatecas (*Hartweg*, 243); South Mexico, Guanajuato (*Dugès*).—One of the common species, having nearly the same range as the genus. Hb. Kew.

7. **Potamogeton pauciflorus,** Pursh, Fl. Am. Sept. i. p. 121; Ch. et Schl. in Linnæa, ii. p. 176, t. 4. fig. 7; Kunth, Enum. Pl. iii. p. 136; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 489; S. Wats. Bot. Calif. ii. p. 197, et in Proc. Am. Acad. xviii. p. 169.

CANADA southward.—MEXICO, Morales (*Schaffner*).—Also recorded from the SANDWICH ISLANDS.

8. **Potamogeton pectinatus,** Linn. Sp. Pl. ed. 1, p. 127; Kunth, Enum. Pl. iii. p. 137; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 490; S. Wats. Bot. Calif. ii. p. 198.

CANADA to CALIFORNIA and FLORIDA.—SOUTH MEXICO, near the city of Mexico (*Bourgeau*, 321), in one small lagoon near Chapultepec (*Schaffner*); BRITISH HONDURAS, Belize (*Bernoulli*).—EUROPE; ASIA; AFRICA; AUSTRALIA. Hb. Kew.

9. **Potamogeton perfoliatus,** Linn. Sp. Pl. ed. 1, p. 126; Kunth, Enum. Pl. iii. p. 133; Chapman, Fl. Southern U. S. p. 446; S. Wats. Bot. Calif. ii. p. 197.

CANADA to CALIFORNIA and FLORIDA.—GUATEMALA, Laguna de Atitlan, near San Lucas (*Bernoulli*, 600).—EUROPE; NORTH ASIA; WEST AFRICA; AUSTRALIA. Hb. Kew.

3. NAIAS.

Naias, Linn. Gen. Plant. n. 1018; Benth. et Hook. f. Gen. Plant. iii. p. 1018.

About ten species, inhabiting fresh water in nearly all Temperate and Tropical regions.

1. **Naias flexilis,** Rostk. et Schm. Flora Sedin., ex Kunth, Enum. Pl. iii. p. 114; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 483; Cham. in Linnæa, iv. p. 501.
Naias canadensis, Michx. Fl. Am.-Bor. ii. p. 220; A. Gr. loc. cit.

CANADA southward.—SOUTH MEXICO, Hacienda de la Laguna (*Schiede & Deppe*), lagoons around Mexico (*Schaffner*); NICARAGUA, Greytown (*Tate*).—Also widely dispersed in EUROPE and ASIA. Hb. Kew.

Order CLVIII. ERIOCAULEÆ.

Eriocauleæ, Benth. et Hook. Gen. Plant. iii. p. 1019.

Of this Order six genera are defined by Bentham and Hooker, all of which, except an African one of three species, are represented in America, where three of them are endemic; while the remarkable genus *Pæpalanthus,* comprising upwards of 200 species, is restricted to America, with the exception of a single species found in South Africa; and only one species of the genus occurs in North America, the rest being South-American and having their greatest concentration in Brazil. Altogether there are about 325 species of this Order.

1. ERIOCAULON.

Eriocaulon, Linn. Gen. Plant. n. 100; Benth. et Hook. Gen. Plant. iii. p. 1020.

This genus numbers about 100 species, widely diffused in warm countries, and a few occur in Temperate regions.

1. **Eriocaulon benthami,** Kunth, Enum. Pl. iii. p. 545 ; Kœrn. in Mart. Fl. Bras. iii. p. 490.

Eriocauli, sp. nov. ? Benth. Pl. Hartw. p. 28.

South Mexico, Lagos (*Hartweg*) ; Guatemala (*Godman & Salvin*). Hb. Kew.

2. **Eriocaulon ehrenbergianum,** Klotzsch ex Kœrn. in Mart. Fl. Bras. iii. p. 491.

Eriocaulon benthami, Schl. in Linnæa, xviii. p. 434, pro parte, nec Kunth.

South Mexico, valley of Toluca, near La Ventilla (*Schiede*), Mineral del Monte and other localities (*Ehrenberg ; Aschenborn*).

3. **Eriocaulon microcephalum,** H. B. K. Nov. Gen. et Sp. i. p. 253 ; Kunth, Enum. Pl. iii. p. 548 ; Kœrn. in Mart. Fl. Bras. iii. p. 492.

South Mexico, Chinantla, Puebla at 7000 feet (*Liebmann*).—Andes. Hb. Kew.

Liebmann has given the Mexican plant a distinctive name, but we are not aware that he ever published it.

4. **Eriocaulon schiedeanum,** Kœrn. in Mart. Fl. Bras. iii. p. 492.

Eriocauli species, an *E. microcephalum,* H. B. K. ? Ch. et Schl. in Linnæa, vi. p. 43.

South Mexico, near Hacienda de la Laguna (*Schiede*).

5. **Eriocaulon,** sp.

Eriocaulon benthami, Seem. Bot. Voy. ' Herald,' p. 221, non Kunth.

Panama, in meadows near the city of Panama (*Seemann*, 295). Hb. Kew.

6. **Eriocaulon,** sp.

Eriocaulon microcephalum, Hook. et Arn. Bot. Beech. Voy. p. 311, non H. B. K.

Eriocaulon benthami, Seem. Bot. Voy. ' Herald,' p. 337, non Kunth.

South Mexico, Jalisco (*Beechey*). Hb. Kew.

[The Centrolepideæ are a small Order comprising four genera and about thirty species, nearly all Australian, with one in Eastern Asia and three or four in New Zealand and the extreme south of America. The Restiaceæ, another Order not represented within our limits, are more numerous, there being twenty genera and about 230 species, for the greater part inhabiting South Africa and Australia, a very few New Zealand, one Cochinchina, and one only South America.]

Order CLIX. CYPERACEÆ.

Cyperaceæ, Benth. et Hook. Gen. Plant. iii. p. 1037.

Sixty-one genera, numbering between two and three thousand species, dispersed over the whole world wherever phanerogamic vegetation exists. Upwards of 3000 species have been described ; but Bentham and Hooker estimate that there are barely 2200.

1. CYPERUS.

Cyperus, Linn. Gen. Plant. n. 66; Benth. et Hook. Gen. Plant. iii. p. 1043.

Of this large and widely spread genus upwards of 700 species have been proposed; but it is probable that a large number of them have been described under two or more names from different countries; and Bentham and Hooker estimate that there are not more than 400 really distinct ones. The Mexican species are in need of a thorough revision and comparison with those from other parts of the world.

1. **Cyperus acutiusculus,** Lag. Gen. et Sp. Pl. p. 2; Kunth, Enum. Pl. ii. p. 105; Steud. Cyper. p. 54.

MEXICO, cultivated in the Madrid Botanic Garden from seed collected by Sessé.

2. **Cyperus alpinus,** Liebm. Mexicos Halvgr. p. 27; Steud. Cyper. p. 56.

SOUTH MEXICO, Chinantla, Puebla 7000 to 7500 feet (*Liebmann*).

3. **Cyperus amabilis,** Vahl, Enum. Pl. ii. p. 318; Kunth, Enum. Pl. ii. p. 108; Clarke in Journ. Linn. Soc. xxi. p. 85.

Cyperus aureus, C. aurantiacus et *C. oligostachyus,* H. B. K. Nov. Gen. et Sp. i. pp. 204, 205; Kunth, Enum. Pl. ii. pp. 20, 21; Bœck. in Linnæa, xxxv. p. 494.
Cyperus glareosus, Liebm. Mexicos Halvgr. p. 16.

SOUTH MEXICO, Potrero de Consoquitla, Trapiche de la Concepcion, Comaltepec (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 1986); GUATEMALA, in the hot earth near the Air Volcanos in the neighbourhood of Ahuachapan (*Skinner*).—COLOMBIA to PERU, GUIANA, and BRAZIL; also in Tropical ASIA and AFRICA. Hb. Kew.

4. **Cyperus apiculatus,** Liebm. Mexicos Halvgr. p. 32; Walp. Ann. iii. p. 673.

SOUTH MEXICO, San Antonio Huatusco at 4500 feet (*Liebmann*).

5. **Cyperus aristatus,** Rottb. Descr. et Ic. p. 23, t. 6. fig. 1; Bœck. in Linnæa, xxxv. p. 500; Clarke in Journ. Linn. Soc. xxi. p. 91; S. Wats. in Proc. Am. Acad. xviii. p. 169.

Cyperus squamosus, Linn. Amœn. Acad. iv. p. 303, partim, nec Rottb.
Cyperus inflexus, Muehlb. Descr. Gram. p. 16.
Cyperus purshii, Rœm. et Schult. Syst. Veg. ii. p. 177.
Cyperus falciculosus, Liebm. Halvgr. p. 16.

CANADA southward. NORTH MEXICO, Matamoros (*Berlandier*), near Monclova, Coahuila (*Palmer*, 1330), San Rafael, San Luis Potosi (*Schaffner*, 563); SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 2154), Antigua, Vera Cruz (*Liebmann*), Yucatan (*Schott*).—Southward to CHILI and PARAGUAY; also in Tropical and Sub tropical ASIA, AFRICA, and AUSTRALIA. Hb. Kew.

6. **Cyperus articulatus,** Linn. Sp. Pl. ed. 1, p. 44; Bœck. in Linnæa, xxxvi. p. 274; Clarke in Journ. Linn. Soc. xxi. p. 155; S. Wats. in Proc. Am. Acad. xviii. p. 170.

FLORIDA; LOUISIANA; TEXAS.—SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 2151),

Guanajuato (*Dugès*), Puente Nacional, Vera Cruz (*Linden*, 60); NICARAGUA, Greytown (*Tate*, 87, 504).—COLOMBIA to GUIANA and BRAZIL, and in the WEST INDIES; also in ASIA, AFRICA, and AUSTRALIA. Hb. Kew.

7. **Cyperus aschenbornianus,** Bœck. in Linnæa, xxxv. p. 460.
MEXICO (*Aschenborn*).

8. **Cyperus atrosanguineus,** Liebm. Mexicos Halvgr. p. 40 (sub *Marisco*).
SOUTH MEXICO, Chinantla, Puebla 7000 to 7500 feet (*Liebmann*). Hb. Kew.

9. **Cyperus bipontii,** Bœck. in Flora, 1857, p. 33.
SOUTH MEXICO, Mirador, Vera Cruz.

10. **Cyperus brachystachys,** Nees; Bœck. in Linnæa, xxxvi. p. 310.
MEXICO (ex *Bœckeler*).—SURINAM.

11. **Cyperus breviradiatus,** Liebm. Mexicos Halvgr. p. 26.
SOUTH MEXICO, Potrero de Consoquitla at 2500 feet (*Liebmann*), Hb. Kew.

12. **Cyperus camphoratus,** Liebm. Mexicos Halvgr. p. 28; Bœck. in Linnæa, xxxvi. p. 359.
SOUTH MEXICO, Potrero de Consoquitla, Mirador, &c. (*Liebmann*). Hb. Kew.

13. **Cyperus canus,** Presl, Reliq. Hænk. i. p. 179; Kunth, Enum. Pl. ii. p. 33; Liebm. Mexicos Halvgr. p. 18.
SOUTH MEXICO, Mirador and Colipa, Vera Cruz, and San Augustin, Oaxaca (*Liebmann*); GUATEMALA (*Skinner*). Hb. Kew.

14. **Cyperus caracasanus,** Kunth, Enum. Pl. ii. p. 86; Liebm. Mexicos Halvgr. p. 26; Bœck. in Linnæa, xxxvi. p. 358.
SOUTH MEXICO, Potrero de Consoquitla (*Liebmann*); COSTA RICA, Aguacate (*Œrsted*). —COLOMBIA. Hb. Kew.

15. **Cyperus ciliatus,** Jungh. in Linnæa, vi. p. 25; Bot. Zeit. 1849, p. 97; Kunth, Enum. Pl. ii. p. 62; Bœck. in Linnæa, xxxvi. p. 519; Liebm. Mexicos Halvgr. p. 22.
SOUTH MEXICO, between Santa Fé and Plan del Rio (*Schiede & Deppe*).

16. **Cyperus compressus,** Linn. Sp. Pl. ed. 1, p. 46; Bœck. in Linnæa, xxxv. p. 517; Clarke in Journ. Linn. Soc. xxi. p. 97.
FLORIDA; LOUISIANA.—NICARAGUA, Greytown (*Tate*, 57, 498); PANAMA, Chagres (*Fendler*, 352).—COLOMBIA to GUIANA and BRAZIL, and in the WEST INDIES; also generally dispersed in Tropical ASIA and in Tropical and South AFRICA. Hb. Kew.

17. **Cyperus cuspidatus,** H. B. K. Nov. Gen. et Sp. i. p. 204; Kunth, Enum. Pl. ii. p. 22; Bœck. in Linnæa, xxxv. p. 496; Clarke in Journ. Linn. Soc. xxi. p. 88; Liebm. Mexicos Halvgr. p. 16.

South Mexico, Trapiche de la Concepcion (*Liebmann*).—Guiana; Brazil; also in Tropical Asia, Africa, and Australia. Hb. Kew.

18. **Cyperus cymbæformis,** Liebm. Mexicos Halvgr. p. 20; Steud. Cyper. p. 55; Walp. Ann. iii. p. 670.

Nicaragua, near Granada; Costa Rica, Pitayaya and Cartago (*Ærsted*).

19. **Cyperus dipsaceus,** Liebm. Mexicos Halvgr. p. 31.

South Mexico, Consoquitla (*Liebmann*). Hb. Kew.

20. **Cyperus discigerus,** Liebm. Mexicos Halvgr. p. 24; Steud. Cyper. p. 55.

South Mexico, Trapiche de la Concepcion (*Liebmann*).

21. **Cyperus dissitiflorus,** Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 266; Bœck. in Linnæa, xxxvi. p. 364.

Louisiana.—South Mexico, region of Orizaba (*Bourgeau*, 2586); Panama, Empire station (*S. Hayes*, 426). Hb. Kew.

22. **Cyperus distans,** Linn. f. Suppl. p. 103; Bœck. in Linnæa, xxxv. p. 612; Clarke in Journ. Linn. Soc. xxi. p. 144; Liebm. Mexicos Halvgr. p. 29.

Nicaragua, Tepitapa (*Ærsted*).—Widely dispersed in the Tropics.

23. **Cyperus ehrenbergianus,** Bœck. in Linnæa, xxxvi. p. 39.

Mexico, without locality (*Ehrenberg*).

24. **Cyperus elegans,** Linn. Sp. Pl. ed. 1, p. 45; Bœck. in Linnæa, v. p. 532; Clarke in Journ. Linn. Soc. xxi. p. 125.

Cyperus laxus, Lam. Ill. i. p. 146; Kunth, Enum. ii. p. 28; Griseb. Fl. Brit. W. Ind. p. 563.
Cyperus tolucensis, H. B. K. Nov. Gen. et Sp. i. p. 206; Kunth, Enum. ii. p. 28.

South Mexico, Nevado de Toluca at 10,000 feet (*Humboldt & Bonpland*); Guatemala, Mazatenango (*Bernoulli*, 579 ?), Volcan de Fuego (*Salvin*); Nicaragua, Greytown (*Tate*, 496, 497); Panama, Empire station (*S. Hayes*).—Southward to Paraguay and in the West Indies; also widely diffused in Tropical Asia. Hb. Kew.

25. **Cyperus esculentus,** Linn. Sp. Pl. ed. 1, p. 45; Host. Gram. iii. p. 50, t. 75; Kunth, Enum. Pl. ii. p. 61; Bœck. in Linnæa, xxxvi. p. 287; Clarke in Journ. Linn. Soc. xxi. p. 178.

Cyperus hydra, H. B. K. Nov. Gen. et Sp. i. p. 205, non Mich.
Cyperus rotundus, Benth. Pl. Hartw. p. 28, non Linn.
Cyperus phymatodes, Muehl. Gram. p. 23; S. Wats. in Proc. Am. Acad. xviii. p. 170.

Canada southward.—North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 908); South Mexico, Aguas Calientes (*Hartweg*, 254), region of Orizaba, and mountains of Guadalupe (*Bourgeau*, 526, 3286); Nicaragua, Javali (*Tate*, 501); Panama, Mamei (*S. Hayes*, 580).—Southward to Uruguay; also in Southern Europe and Tropical Africa, Asia, and Australia. Hb. Kew.

26. **Cyperus firmus,** Presl, Reliq. Hænk. i. p. 171; Kunth, Enum. Pl. ii. p. 105; Steud. Cyper. p. 54.

MEXICO.

Bœckeler (Linnæa, xxxvi. p. 340) suggests that this, from the description, may be the same as *C. canescens*, Vahl, a species having a wide range in the Tropics of the Old World.

27. **Cyperus flavescens,** Linn. Sp. Pl. ed. 1, p. 46; Clarke in Journ. Linn. Soc. xxi. p. 36; S. Wats. in Proc. Am. Acad. xviii. p. 169; Bœck. in Linnæa, xxxv. p. 438.

KENTUCKY to FLORIDA and LOUISIANA.—NORTH MEXICO, San Luis Potosi (*Schaffner*); COSTA RICA (ex *Bœckeler*).—Southward to BRAZIL; also in EUROPE, Western ASIA, and in AFRICA.

28. **Cyperus flavicomus,** Michx. Fl. Bor.-Am. i. p. 27; Bœck. in Linnæa, xxxv. p. 470; S. Wats. in Proc. Am. Acad. xviii. p. 169.

VIRGINIA southward.—SOUTH MEXICO, Barranca of Santa Fé (*Bourgeau*, 528), Vera Cruz to Orizaba (*Müller*, 1989), Guanajuato (*Dugès*). Hb. Kew.

29. **Cyperus flavus,** Bœck. in Linnæa, xxxvi. p. 384; S. Wats. in Proc. Am. Acad. xviii. p. 170.

Mariscus flavus, Vahl, Enum. Pl. ii. p. 374; H. B. K. Nov. Gen. et Sp. i. p. 213; Kunth, Enum. Pl. ii. p. 118; Liebm. Mexicos Halvgr. p. 40.

Cyperus flavamariscus, Griseb. Fl. Brit. W. Ind. p. 567.

NORTH MEXICO, San Miguelito, San Luis Potosi (*Schaffner*, 565; *Parry & Palmer*, 909); SOUTH MEXICO, Real del Monte (*Coulter*, 1614), Chinantla 7000 feet (*Liebmann*), near the city of Mexico (*Bourgeau*, 428, 432, 661); GUATEMALA, Dueñas (*Salvin*); NICARAGUA, Greytown (*Tate*); PANAMA, Empire station (*S. Hayes*, 428).—Southward to BRAZIL and in the WEST INDIES. Hb. Kew.

30. **Cyperus fossarum,** Liebm. Mexicos Halvgr. p. 37; Steud. Cyper. p. 57.

SOUTH MEXICO, near Tehuantepec, Oaxaca (*Liebmann*). Hb. Kew.

31. **Cyperus fragilis,** Liebm. Mexicos Halvgr. p. 38.

SOUTH MEXICO, coast region near Paso de Doña Juana, Vera Cruz (*Liebmann*). Hb. Kew.

32. **Cyperus fulvescens,** Liebm. Mexicos Halvgr. p. 22; Steud. Cyper. p. 55.

SOUTH MEXICO, in the neighbourhood of Trapiche de la Concepcion (*Liebmann*).

33. **Cyperus giganteus,** Vahl, Enum. Pl. ii. p. 364; Bœck. in Linnæa, xxxvi. p. 305.

SOUTH MEXICO, Antigua, Vera Cruz (*Linden*, 70; *Galeotti*, 5787, 5788), Real del Monte, 5000 feet (*Galeotti*, 5841); BRITISH HONDURAS (*Temple*); NICARAGUA, near

Granada (*Lévy*); Panama, Aspinwall (*S. Hayes*, 146, 593).—Guiana; Brazil. Hb. Kew.

34. **Cyperus granadinus,** Liebm. Mexicos Halvgr. p. 36; Steud. Cyper. p. 57; Walp. Ann. iii. p. 675.

Nicaragua, near Granada (*Œrsted*).

35. **Cyperus haspan,** Linn. Sp. Pl. ed. i. p. 45; Kunth, Enum. Pl. ii. p. 34; Bœck. in Linnæa, xxxv. p. 574 (excl. var. *a*); Clarke in Journ. Linn. Soc. xxi. p. 119.

Cyperus gracilis, Muehl. Gram. p. 18.

Cyperus nudus, H. B. K. Nov. Gen. et Sp. i. p. 203.

Kentucky to Florida and Texas.—South Mexico, Consoquitla, Mirador and Jicaltepec (*Liebmann*); Panama, Empire station (*S. Hayes*), near the city of Panama (*Seemann*, 143).—Southward to Paraguay, and in the West Indies; also in Tropical Asia, Africa, and Australia. Hb. Kew.

36. **Cyperus humboldtianus,** Schult. Mant. ii. p. 100; Kunth, Enum. Pl. ii. p. 11; Bœck. in Linnæa, xxxv. p. 441.

South Mexico (*Liebmann*, fide *Bœckeler*).

37. **Cyperus humilis,** Kunth, Enum. Pl. ii. p. 23; Bœck. in Linnæa, xxxv. p. 449.

Cyperus tenerrimus, Presl, Reliq. Hænk. i. p. 166; Kunth, Enum. Pl. ii. p. 44; Liebm. Mexicos Halvgr. p. 21.

South Mexico, Acapulco (*Hænke*).—Cuba.

38. **Cyperus incompletus,** Link, Hort. Berol. i. p. 318 (excl. synon.); Bœck. in Linnæa, xxxvi. p. 361; S. Wats. in Proc. Am. Acad. xviii. p. 170.

Mariscus patulus, Schrad. in Nees, Cyp. Bras.

Mariscus longiradiatus, Liebm. Mexicos Halvgr. p. 44.

South Mexico, Mirador, Vera Cruz (*Liebmann*), Guanajuato (*Dugès*).—Brazil.

39. **Cyperus ischnos,** Schl. in Bot. Zeit. 1849, p. 99; Bœck. in Linnæa, xxxvi. p. 334; Liebm. Mexicos Halvgr. p. 29.

South Mexico, Jalapa (*Schiede*), Hacienda de Buenavista, between Jalapa and Mirador, and Potrero de Consoquitla 2500 to 3000 feet (*Liebmann*), Borrego, Orizaba (*Bourgeau*, 2978), Guadalupe (*Schaffner*, 4); Nicaragua, near Granada (*Lévy*), Javali, Chontales (*Tate*, 508).—Colombia, and also in India, according to Bœckeler, though it is not included in Clarke's enumeration (Journ. Linn. Soc. xxi. pp. 1–202). Hb. Kew.

40. **Cyperus lævigatus,** Linn. Mant. p. 79; Bœck. in Linnæa, xxxv. p. 486; Clarke in Journ. Linn. Soc. xxi. p. 77; S. Wats. Bot. Calif. ii. p. 214.

Cyperus mucronatus, Rottb. Desc. et Ic. p. 19, t. 8. fig. 4; H. B. K. Nov. Gen. et Sp. i. p. 203; Liebm. Mexicos Halvgr. p. 15.

California.—South Mexico, Leon (*Hartweg*, 240).—Generally dispersed in the Tropics, and extending beyond to Southern Europe, South Africa, &c. Hb. Kew.

41. **Cyperus lateriflorus,** Torr. in Bot. U. S. & Mex. Bound. Surv. p. 226.
North Mexico, Santa Cruz, Sonora (*Wright*, 1950). Hb. Kew.

42. **Cyperus leucolepis,** Bœck. in Linnæa, xxxv. p. 610.
South Mexico, without locality (*Coulter*, 1611).

43. **Cyperus liebmanni,** Steud. Cyper. p. 7.
Cyperus inconspicuus, Liebm. Mexicos Halvgr. p. 9; Walp. Ann. iii. p. 665.
Costa Rica (*Œrsted*).

44. **Cyperus ligularis,** Linn. Amœn. Acad. v. p. 31; Kunth, Enum. Pl. ii. p. 69; Bœck. in Linnæa, xxxvi. p. 332; Clarke in Journ. Linn. Soc. xxi. p. 196.
Mariscus rufus, H. B. K. Nov. Gen. et Sp. i. p. 216, t. 67.
South Mexico, between Mexico and Tacubaya (*Bourgeau*, 215); Panama, Chagres (*Fendler*, 355).—Colombia to Brazil; also in Tropical Africa and Australia. Hb. Kew.

45. **Cyperus luzulæ,** Rottb. Descr. et Ic. p. 23, t. 13. fig. 2; Kunth, Enum. Pl. ii. p. 43; Bœck. in Linnæa, xxxv. p. 561; Liebm. Mexicos Halvgr. p. 20.
South Mexico, Colipa (*Liebmann*), Tuspango (*Bourgeau*, 2385); Nicaragua, Greytown (*Tate*, 500); Panama (*Seemann*, 148).—Colombia to Peru, Guiana, and Brazil, and in the West Indies.

46. **Cyperus macrocephalus,** Liebm. Mexicos Halvgr. p. 33.
South Mexico, coast region on the Rio Nautla near Pital (*Liebmann*). Hb. Kew.

47. **Cyperus melanostachyus,** H. B. K. Nov. Gen. et Sp. i. p. 207; Liebm. Mexicos Halvgr. p. 13 (varietates); Bœck. in Linnæa, xxxv. p. 455; Clarke in Journ. Linn. Soc. xxi. p. 67; S. Wats. in Proc. Am. Acad. xviii. p. 169.
Cyperus variegatus, H. B. K. Nov. Gen. et Sp. i. p. 208.
North Mexico, region of San Luis Potosi (*Parry & Palmer*, 904; *Schaffner*, 568); South Mexico, Real del Monte (*Coulter*, 1613), valley of Mexico (*Bourgeau*, 431), Vera Cruz to Orizaba (*Müller*, 1985), Chinantla and San Lorenzo, Tehuacan (*Liebmann*); Guatemala, Volcan de Fuego (*Salvin*).—Colombia to Bolivia. Hb. Kew.

48. **Cyperus mexicanus,** Liebm. Mexicos Halvgr. p. 39; Walp. Ann. iii. p. 677.
South Mexico, Santa Maria, Tlapacoyo, Vera Cruz (*Liebmann*).

49. **Cyperus mutisii,** Bœck. in Linnæa, xxxvi. p. 387.
Mariscus mutisii, H. B. K. Nov. Gen. et Sp. i. p. 216, t. 66.
Mariscus karwinskianus, Kunth, Enum. Pl. ii. p. 123.
Mariscus mexicanus, Steud. Cyper. p. 64.
Mariscus oaxacensis, Steud. Cyper. p. 65 ?
South Mexico, Vera Cruz to Orizaba (*Müller*, 1984; *Bourgeau*, 2979).—Peru; Brazil. Hb. Kew.

50. **Cyperus obesus,** Liebm. Mexicos Halvgr. p. 23; Steud. Cyp. p. 55.

South Mexico, Hacienda de Mirador, at 3000 feet, and Potrero de Consoquitla (*Liebmann*).

51. **Cyperus œrstedii,** Liebm. Mexicos Halvgr. p. 36; Steud. Cyper. p. 57; Walp. Ann. iii. p. 676.

Nicaragua, near Segovia (*Œrsted*).

52. **Cyperus olfersianus,** Kunth, Enum. Pl. ii. p. 10; Bœck. in Linnæa, xxxv. p. 439; Clarke in Journ. Linn. Soc. xxi. p. 62.

Cyperus helvus, Liebm. Mexicos Halvgr. p. 9.

Cyperus ambiguus, Liebm. Mexicos Halvgr. p. 11, non Steud.

Cyperus correctus, Steud. Cyper. p. 7.

South Mexico, San Antonio, Huatusco, 4500 feet, and Mecapolca (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 1765; *Bourgeau*, 2731); Guatemala, Mazatenango and Chojoja (*Bernoulli*, 418, 575).—Cuba to Uruguay. Hb. Kew.

53. **Cyperus perpusillus,** Bœck. in Linnæa, xxxv. p. 499.

South Mexico, without locality (*Coulter*, 1611, ex parte).

54. **Cyperus piceus,** Liebm. Mexicos Halvgr. p. 12; Bœck. in Linnæa, xxxv. p. 455 in nota (ubi errore *picreus*); Clarke in Journ. Linn. Soc. xxi. p. 43.

South Mexico, Vera Cruz to Orizaba (*Müller*, 1987, partim), neighbourhood of San Pedro Nolasco, and San Antonio Huatusco, 4500 feet (*Liebmann*). Hb. Kew.

55. **Cyperus polystachyus,** Rottb. Descr. et Ic. p. 39, t. 11. fig. 1; Bœck. in Linnæa, xxxv. p. 477; Clarke in Journ. Linn. Soc. xxi. p. 51 (varietates plures).

Cyperus microdontus, Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 255, et in Bot. U. S. & Mex. Bound. Surv. p. 226.

Cyperus texensis, Steud. Cyper. p. 9.

Cyperus fugax, Liebm. Mexicos Halvgr. p. 8.

Pycreus olfersianus, Nees, in Mart. Fl. Brasil. Cyper. p. 8, non *Cyperus olfersianus,* Kunth.

New Jersey to Florida and Texas.—South Mexico, Morelia at 6000 feet (*Galeotti*, 5843), Vera Cruz to Orizaba (*Müller*, 2155).—Spread over nearly all Tropical and Subtropical Regions in the world. Hb. Kew.

56. **Cyperus prolixus,** H. B. K. Nov. Gen. et Sp. i. p. 206; Kunth, Enum. Pl. ii. p. 79; Bœck. in Linnæa, xxxv. p. 593; Liebm. Mexicos Halvgr. p. 24.

South Mexico, San Antonio, Huatusco (*Liebmann*), Escamella, Orizaba (*Bourgeau*, 2976; *Müller*, 1980); Guatemala, San Gerónimo and Volcan de Fuego (*Godman & Salvin*).—Colombia to Uruguay. Hb. Kew.

57. **Cyperus pycnostachyus,** Kunth, Enum. Pl. ii. p. 77; Bœck. in Linnæa, xxxvi. p. 322.

Mariscus pycnostachyus, H. B. K. Nov. Gen. et Sp. i. p. 215, t. 65.

South Mexico, between Puerto de Andaracuas and Jurirapundaro at 5700 feet (*Humboldt & Bonpland*), without locality (*Aschenborn; Schaffner*).

58. **Cyperus pygmæus,** Rottb. Desc. et Ic. p. 20, t. 14. figg. 4, 5; Bœck. in Linnæa, xxxv. p. 493; Liebm. Mexicos Halvgr. p. 15.

Cyperus pygmæus, var. ? *aztecorum,* Clarke in Journ. Linn. Soc. xxi. p. 83.

South Mexico, Colipa, Jicaltepec and Pital (*Liebmann*).—Cuba. Hb. Kew.

The typical *C. pygmæus* is very widely spread in the Old World.

59. **Cyperus rufinus,** Liebm. Mexicos Halvgr. p. 34; Steud. Cyper. p. 57.

South Mexico, Tehuacan and San Lorenzo (*Liebmann*).

60. **Cyperus ruizianus,** Bœck. in Linnæa, xxxvi. p. 360.

Costa Rica (*Hoffmann*).—Colombia; Peru.

61. **Cyperus schaffneri,** Bœck. in Flora, 1878, p. 30.

South Mexico, in the valley of Mexico (*Schaffner*).

62. **Cyperus schweinitzii,** Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 276; Bœck. in Linnæa, xxxv. p. 518.

From the Lake Region to Texas.—North Mexico, Sonoita valley (*Rothrock*); South Mexico, Tacubaya (*Bourgeau*)? Hb. Kew.

63. **Cyperus selloanus,** Bœck. in Linnæa, xxxv. p. 446.

Mexico (*Berlandier*).—Brazil.

64. **Cyperus semiochraceus,** Bœck. in Flora, 1878, p. 29.

South Mexico, valley of Mexico (*Schaffner*).

65. **Cyperus sertularinus,** Liebm. Mexicos Halvgr. p. 25; Steud. Cyper. p. 56; Walp. Ann. iii. p. 671.

Nicaragua, Masaya (*Œrsted*).

66. **Cyperus seslerioides,** H. B. K. Nov. Gen. et Sp. i. p. 209; Kunth, Enum. Pl. ii. p. 44; Bœck. in Linnæa, xxxv. p. 498.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 910); South Mexico, Vera Cruz to Orizaba (*Müller*, 1993), Aguas Calientes (*Hartweg*, 256), Pedregal (*Bourgeau*, 212), without locality (*Bates; Graham*), Real del Monte (*Coulter*, 1611, 1612), Mirador (*Linden*, 280), mountains near Morelia 7000 to 8000 feet (*Galeotti*, 5826).—Also on the Orinoco. Hb. Kew.

67. **Cyperus simplex,** H. B. K. Nov. Gen. et Sp. i. p. 207; Kunth, Enum. Pl. ii. p. 26; Bœck. in Linnæa, xxxv. p. 531; Liebm. Mexicos Halvgr. p. 18.

South Mexico, Jocotepec, Chinantla, Oaxaca (*Liebmann*), Sierra San Pedro Nolasco, &c. (*Jurgensen*, 657).—Colombia to Peru, Guiana, and Brazil. Hb. Kew.

68. **Cyperus spectabilis,** Schreb.; Bœck. in Linnæa, xxxv. p. 605 (varietates); Clarke in Journ. Linn. Soc. xxi. p. 142.

Cyperus triceps, Nees in Linnæa, xix. p. 697.
Cyperus maninæ, H. B. K. Nov. Gen. et Sp. i. p. 209; Liebm. Mexicos Halvgr. p. 31.
Cyperus asperrimus, Liebm. Mexicos Halvgr. p. 30, cum var. *β*.
Cyperus scaberrimus, Nees in Linnæa, xix. p. 697.
Cyperus divergens, H. B. K. Nov. Gen. et Sp. i. p. 208.

South Mexico, Mirador and Consoquitla (*Liebmann*), Aguas Calientes (*Hartweg*, 255), without locality (*Graham*).—Costa Rica (ex *Bœckeler*). Hb. Kew.

69. **Cyperus sphacelatus**, Rottb. Descr. et Ic. p. 26; Kunth, Enum. Pl. ii. p. 63; Bœck. in Linnæa, xxxvi. p. 292; Griseb. Fl. Brit. W. Ind. p. 565.

Panama, Empire station (*S. Hayes*, 425, 449 ?).—West Indies to Brazil. Hb. Kew.

70. **Cyperus squalidus**, Liebm. Mexicos Halvgr. p. 11; Steud. Cyper. p. 7; Walp. Ann. iii. p. 666.

Costa Rica, San José (*Œrsted*).

71. **Cyperus surinamensis**, Rottb. Descr. et Ic. p. 35, t. 6. fig. 5; Bœck. in Linnæa, xxxv. p. 554; Clarke in Journ. Linn. Soc. xxi. p. 116; Liebm. Mexicos Halvgr. p. 20.

South Mexico, Antigua, Paso de Doña Juana, Jicaltepec, Mirador, &c. (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 1971), valley of Cordova (*Bourgeau*, 2291); Guatemala, Dueñas 4950 feet (*Salvin*).—Colombia to Peru, Guiana, and Brazil, and in the West Indies. Hb. Kew.

72. **Cyperus tetragonus**, Ell. Sketch Bot. S. Car. i. p. 71; Chapman, Fl. Southern U. S. p. 507.

Carolina to Florida.—Mexico, without locality (*Schaffner*). Hb. Kew.

73. **Cyperus thyrsiflorus**, Jungh. ex Ch. et Schl. in Linnæa, vi. p. 24; Kunth, Enum. Pl. ii. p. 86; Bœck. in Linnæa, xxxvi. p. 365; Liebm. Mexicos Halvgr. p. 26.

South Mexico, near the city of Mexico and region of Orizaba (*Bourgeau*, 2591, 2631), Colipa, Jicaltepec and Potrero de Consoquitla (*Liebmann*); Guatemala, Volcan de Fuego (*Salvin*); Panama, Chagres (*Fendler*, 351).—Colombia to Brazil. Hb. Kew.

74. **Cyperus unioloides**, R. Br. Prodr. Fl. N. Holl. p. 216; Clarke in Journ. Linn. Soc. xxi. p. 61 (*δ. bromoides*).

Cyperus bromoides, Willd. ex Link, Jahrb. iii. p. 85; Kunth, Enum. Pl. ii. p. 8.
Cyperus pseudobromoides, Bœck. in Linnæa, xxxv. p. 464.

South Mexico, region of Orizaba (*Bourgeau*, 2733); Guatemala, Dueñas (*Salvin*).—Venezuela to Paraguay. Hb. Kew.

Other varieties of this species are found in India, Australia, and South Africa.

75. **Cyperus vegetus**, Willd. Sp. Pl. i. p. 283; Kunth, Enum. Pl. ii. p. 40; Schl. in Bot. Zeit. 1849, p. 82; Liebm. Mexicos Halvgr. p. 19; Bœck. in Linnæa, xxxv. p. 550; Clarke in Journ. Linn. Soc. xxi. p. 115.

South Mexico, near the city of Mexico (*Schiede*).

This species is only recorded from extratropical South America and the island of Juan Fernandez by Bœckeler and Clarke.

76. **Cyperus virens,** Michx. Fl. Am. Bor. i. p. 29; Bœck. in Linnæa, xxxv. p. 553; Clarke in Journ. Linn. Soc. xxi. p. 116; S. Wats. in Proc. Am. Acad. xviii. p. 169.

Florida to Texas.—North Mexico, San Miguelito, San Luis Potosi (*Schaffner*, 562), South Mexico, Vera Cruz to Orizaba (*Müller*, 1982), valley of Cordova (*Bourgeau*, 2165); Guatemala, San Gerónimo (*Godman & Salvin*). Hb. Kew.

77. **Cyperus viscosus,** Ait. Hort. Kew. i. p. 59; Kunth, Enum. Pl. ii. p. 28; Bœck. in Linnæa, xxxv. p. 547; Clarke in Journ. Linn. Soc. xxi. p. 114; Griseb. Fl. Brit. W. Ind. p. 563.

Mexico (ex *Kunth*).—Venezuela; West Indies.

In addition to the foregoing *Cyperi* there are several species described by Liebmann in his 'Mexicos Halvgræs,' pp. 40–43, under *Mariscus*; but, as we have no means of comparing them, we forbear giving them names under *Cyperus*. They are:—*Mariscus astrosanguineus*, Liebm.; *M. asper*, Liebm.; *M. tribachiatus*, Liebm.; *M. pallens*, Liebm.; and *M. ambiguus*, Liebm.

2. KYLLINGA.

Kyllinga, Rottb. Desc. et Ic. Pl. p. 12, t. 4; Benth. et Hook. Gen. Plant. iii. p. 1045 (*Kyllingia,* auct. plur.).

Upwards of fifty species have been proposed and described, but Bentham and Hooker estimate that there are scarcely more than twenty distinct ones. They are generally dispersed in warm countries. The Mexican and Central-American species need revision; but we think that there are not more than four altogether.

1. **Kyllinga brevifolia,** Rottb. Descr. et Ic. p. 13, t. 4. fig. 3; Bœck. in Linnæa, xxxv. p. 424.

As limited by Bœckeler, this has a very wide range both in America and the Old World; he records it from Mexico, and Hayes's Panama 300 is probably this species.

2. **Kyllinga cæspitosa,** Nees, Cyper. Brasil. p. 12, excl. synon. *kunthiana*, ex Bœck. in Linnæa, xxxv. p. 411 (varietates); Liebm. Mexicos Halvgr. p. 45.

Kyllinga pumila, α. humilis, Kunth ex Bœck. l. c.

Florida; Louisiana.—South Mexico, Colipa, Antigua, &c. (*Liebmann*), valley of Cordova and region of Orizaba (*Bourgeau*, 2164, 2587, 2737), San Gerónimo, near Mexico (*Bourgeau*, 662); Guatemala, near Coban (*Türckheim*); Costa Rica (ex *Bœckeler*); Panama, Chagres (*Fendler*, 343).—Southward to Peru and Brazil and in the West Indies. Hb. Kew.

There may be more than one species included under the numbers cited for this species.

3. **Kyllinga liebmanniana,** Steud. Cyper. p. 67.

Kyllinga microcephala, Liebm. Mexicos Halvgr. p. 46; Walp. Ann. iii. p. 681, non Steud.

South Mexico, Colipa, Vera Cruz (*Liebmann*).

4. **Kyllinga odorata,** Vahl, Enum. Pl. ii. p. 382; Bœck. in Linnæa, xxxv. p. 410 (varietates); Liebm. Mexicos Halvgr. p. 45.

Florida.—South Mexico, Antigua and Colipa, Vera Cruz (*Liebmann*), Izhuatlancillo (*Bourgeau*, 2589), Vera Cruz to Orizaba (*Müller*, 1990, 1991); Costa Rica (ex *Bœckeler*).—Colombia to Brazil; also in Tropical Africa. Hb. Kew.

Bœckeler refers *K. sesquiflora,* Torrey, to this species.

5. **Kyllinga vaginata,** Lam., fide Bœck. in Linnæa, xxxv. p. 416.

Kyllinga aphylla, Kunth, Enum. ii. p. 127; Liebm. Mexicos Halvgr. p. 46; Griseb. Fl. Brit. W. Ind. p. 568.

Mexico (ex *Grisebach*); Nicaragua, Greytown (*Tate*, 515), without locality (*Ærsted*); Panama, Chagres (*Fendler*, 349), Aspinwall (*S. Hayes*, 563).—Southward to Ecuador, and in Tropical Africa. Hb. Kew.

3. HELEOCHARIS.

Heleocharis, R. Br. Prodr. Fl. Nov. Holl. p. 224 (*Eleocharis*); Benth. et Hook. Gen. Plant. iii. p. 1047.

This genus is spread over nearly the whole area of the Order in marshy places, including into the Arctic regions. Upwards of eighty species are enumerated, but many of them stand upon very slender characters.

1. **Heleocharis acicularis,** R. Br. Prodr. Fl. Nov. Holl. p. 224; Bœck. in Linnæa, xxxvi. p. 431; S. Wats. in Proc. Am. Acad. xviii. p. 171, et Bot. Calif. ii. p. 221; Bot. U. S. & Mex. Bound. Surv. p. 228.

Scirpus acicularis, Linn. Sp. Pl. ed. 1, p. 48.
Chætocyperus acicularis, Nees, Cyper. Brasil. p. 94.
Chætocyperus polymorphus, a. depauperatus, Liebm. Mexicos Halvgr. p. 54.
Chætocyperus urceolatus, Liebm. Mexicos Halvgr. p. 55.

California to Texas.—North Mexico, region of San Luis Potosi (*Schaffner*, 574; *Parry & Palmer*, 914); South Mexico, Vera Cruz to Orizaba (*Müller*), Dos Puentes between Totutla and Huatosa; also at San Lorenzo, and at Chinantla, Puebla (*Liebmann*); Salvador (*Bernoulli*).—South America and the West Indies; also common in Tropical and Temperate regions in the Old World. Hb. Kew.

2. **Heleocharis arenicola,** Torr. in Engelm. & A. Gr. Pl. Lindh. p. 30; Bot. U. S. & Mex. Bound. Surv. p. 228; S. Wats. in Proc. Am. Acad. xviii. p. 170, et Bot. Calif. ii. p. 222.

California to Texas.—North Mexico, near Morales and at Peñasco, San Luis Potosi (*Schaffner*, 577, 578).

3. **Heleocharis calyptrata,** Steud. Cyper. p. 81.

Limnochloa calyptrata, Liebm. Mexicos Halvgr. p. 56.

Nicaragua, near Segovia (*Œrsted*). Hb. Kew.

4. **Heleocharis cancellata,** S. Wats. in Proc. Am. Acad. xviii. p. 170.

North Mexico, near Morales (*Schaffner*, 575), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 912). Hb. Kew.

5. **Heleocharis capitata,** R. Br. Prodr. Fl. N. Holl. p. 225; Benth. Fl. Austr. vii. p. 296; Bœck. in Linnæa, xxxvi. p. 461; S. Wats. in Proc. Am. Acad. xviii. p. 170; Bot. U. S. & Mex. Bound. Surv. p. 228.

Eleogenus capitatus, Nees, Liebm. Mexicos Halvgr. p. 57.

Texas; New Mexico; South Mexico, Antigua, Colipa, Misantla, &c. (*Liebmann*); Nicaragua, environs of Granada (*Lévy*), Greytown (*Tate*); Panama (ex *Bœckeler*).—Widely distributed over the warmer regions of the Old World, as well as America. Hb. Kew.

6. **Heleocharis chætaria,** Rœm. et Schult. Syst. Veg. ii. p. 154; Kunth, Enum. Pl. ii. p. 140; Bœck. in Linnæa, xxxvi. p. 428.

Heleocharis depauperata et *H. trichoides,* Kunth, Enum. ii. pp. 140, 141.

Scirpus retroflexus, Poir, Encycl. vi. p. 753.

Chætocyperus niveus, Liebm. Mexicos Halvgr. p. 54.

Chætocyperus depauperatus et *C. trichoides,* Steud. Cyper. p. 73.

Nicaragua, Greytown (*Tate*), near Cartago (*Œrsted*); Panama, Chagres (*S. Hayes*, 341; *Seemann*).—Colombia to Brazil, and in the West Indies; also in India. Hb. Kew.

7. **Heleocharis densa,** Benth. Pl. Hartw. p. 27; Steud. Cyper. p. 82.

South Mexico, Aguas Calientes (*Hartweg*). Hb. Kew.

Bœckeler (Linnæa, xxxvi. p. 470) reduces this to *H. geniculata*, Rœm. et Schult., from which it appears to differ in the culms not being distinctly septate.

8. **Heleocharis dombeyana,** Kunth, Enum. Pl. ii. p. 145; Bœck. in Linnæa, xxxvi. p. 450.

Heleocharis truncata, Schl. in Bot. Zeit. 1849, p. 118.

Limnochloa truncata, Liebm. Mexicos Halvgr. p. 56.

Heleocharis montana, Benth. Pl. Hartw. p. 27, nec Rœm. et Schult.

Georgia; Louisiana.—North Mexico, region of San Luis Potosi (*Parry & Palmer*, 913); South Mexico, Chinantla, Puebla 7000 feet, San Felipe and Hacienda de Castresana (*Liebmann*), Guanajuato (*Hartweg*, 241), Vera Cruz to Orizaba (*Müller*, 2148), Santa Fé (*Bourgeau*, 434).—Peru. Hb. Kew.

S. Watson (in Proc. Am. Acad. xviii. p. 170) refers Parry and Palmer's 913 to

H. palustris. We have followed Bœckeler in reducing *H. montana* of the 'Plantæ Hartwegianæ,' and *H. truncata*, Schl., to this species.

9. **Heleocharis geniculata,** Rœm. et Schult. Syst. Veg. ii. p. 150; Kunth, Enum. Pl. ii. p. 152; Bœck. in Linnæa, xxxvi. p. 469.

Limnochloa geniculata, Liebm. Mexicos Halvgr. p. 56.

South Mexico, Huatusco and the neighbourhood of Tiuzutlan, Puebla, at 7000 feet (*Liebmann*), Jalapa (*Linden*, 62; *Galeotti*, 5736), without locality (*Harris*); Guatemala, Dueñas (*Godman & Salvin*); Panama (*Hayes*).—Colombia to Guiana and Brazil. Hb. Kew.

10. **Heleocharis liebmanniana,** Bœck. in Linnæa, xxxvi. p. 439.

South Mexico, Mirador (*Liebmann*).

11. **Heleocharis nana,** Kunth, Enum. Pl. ii. p. 140; Bœck. in Linnæa, xxxvi. p. 421.

Mexico (*Sartorius* ex *Bœckeler*).—Colombia to Chili and Brazil.

12. **Heleocharis nodulosa,** Schult. Mant. ii. p. 87; Bœck. in Linnæa, xxxvi. p. 468.

Eleogenus nodulosus, Nees, Cyper. Bras. p. 104; Liebm. Mexicos Halvgr. p. 57.
Heleocharis mutata, Schl. Bot. Zeit. 1849, p. 134?
Limnochloa mutata, Liebm. Mexicos Halvgr. p. 56?

South Mexico, Jalapa (*Schiede*), Jicaltepec and Mirador (*Liebmann*); Costa Rica (*Hoffmann*); Panama (*Seemann*).—Peru; Brazil. Hb. Kew.

Bœckeler (Linnæa, xxxvi. p. 472) refers Schiede's plant to *H. fistulosa*, Schult., the distribution of which he records as Colombia to Guiana and Brazil; West Indies; Madagascar; India and Ceylon.

13. **Heleocharis ovata,** R. Br. Prodr. Fl. Nov. Holl. p. 224; Kunth, Enum. Pl. ii. p. 151; Bœck. in Linnæa, xxxvi. p. 462.

North America.—South Mexico, San Blas to Guadalajara (*Coulter*, 1624).—Europe; Eastern Asia and the Sandwich Islands. Hb. Kew.

Bœckeler is our authority for this species inhabiting North America; but the name does not occur in the North-American Floras, and doubtless what he refers here is regarded as some other species by American botanists.

14. **Heleocharis radicans,** Steud. Cyper. p. 74 (sub *Chætocypero*).

South Mexico, Cordillera of Oaxaca at 9000 feet (*Galeotti*, 5748).

15. **Heleocharis reptans,** Bœck. in Flora, 1857, p. 34 (sub *Chætocypero*).

South Mexico, Mirador, Vera Cruz.

16. **Heleocharis spiralis,** R. Br. Prodr. Fl. N. Holl. p. 224; Bœck. in Linnæa, xxxvi. p. 473.

Mexico (*Hœnke*).—South America and West Indies.

Bœckeler is our authority for this occurring in Mexico. There is probably the same plant in the Kew Herbarium from Nicaragua (*Tate*, 517) and Panama (*Seemann*, 135).

17. **Heleocharis stolonifera,** Bœck. in Linnæa, xxxvi. p. 424.

Chætocyperus stoloniferus, Nees in Linnæa, xix. p. 695; Steud. Cyper. p. 74.

Mexico (*Aschenborn*).

18. **Heleocharis sulcata,** Nees in Linnæa, ix. p. 294; Bœck. in Linnæa, xxxvi. p. 445.

Scirpidium sulcatum, Nees, Cyper. Bras. p. 98.

South Mexico, Chapultepec (*Schaffner*), Vera Cruz to Orizaba (*Müller*, 2149); Guatemala, between Coban and Gualan (*Bernoulli*, 801); Panama (*Seemann*, 141).—Colombia to Guiana and southward to Buenos Ayres. Hb. Kew.

19. **Heleocharis triflorus,** Bœck. in Flora, 1880, p. 437.

Mexico (*Liebmann*).

4. DICHROMENA.

Dichromena, Michx. Fl. Bor.-Am. i. p. 37; Benth. et Hook. Gen. Plant. iii. p. 1047.

A genus of about eight species restricted to North and Tropical South America and Western Tropical Africa, where one of the American species recurs. There is also a plant in the Kew Herbarium, from Madagascar, which may belong to this genus.

1. **Dichromena leucocephala,** Michx. Fl. Bor.-Am. i. p. 37; Kunth, Enum. Pl. ii. p. 275; Bot. U. S. & Mex. Bound. Surv. p. 229; Chapman, Fl. Southern U. S. p. 530; S. Wats. in Proc. Am. Acad. xviii. p. 171.

Rhynchospora leucocephala, Bœck. in Linnæa, xxxvii. p. 532.

Rhynchospora stellata, Griseb. Fl. Brit. W. Ind. p. 577.

The Bermudas; New Jersey to Florida and Texas.—South Mexico, Lagos (*Hartweg*), Rio Blanco, Orizaba (*Bourgeau*, 2629), Vera Cruz (*Müller*, 2151).—Southward to Brazil and in the West Indies. Hb. Kew.

2. **Dichromena nervosa,** Vahl, Enum. Pl. ii. p. 241.

Rhynchospora nervosa, Bœck. in Linnæa, xxxvii. p. 529.

Dichromena ciliata, Vahl, Enum. Pl. ii. p. 240; Kunth, Enum. Pl. ii. p. 276; Liebm. Mexicos Halvgr. p. 59.

Rhynchospora vahliana, Griseb. Fl. Brit. W. Ind. p. 577.

Dichromena globosa, Rœm. et Schult. Syst. Veg. ii. p. 90; Kunth, Enum. Pl. ii. p. 276.

Dichromena pura, Nees, Cyper. Bras. p. 112, in nota; Steud. Cyper. p. 135.

Rhynchospora pura, Griseb. Fl. Brit. W. Ind. p. 577.

South Mexico, Huitamalco, Puebla, and Talea, Oaxaca (*Liebmann*), without locality (*Harris*); Costa Rica (ex *Bœckeler*); Panama, Chagres (*Fendler*, 342; *Hinds*).—Colombia to Chili, Guiana and Brazil, and in the West Indies. Hb. Kew.

3. **Dichromena pubera,** Vahl, Enum. Pl. ii. p. 241; Kunth, Enum. Pl. ii. p. 275, excl. synon. fide Bœck.

Rhynchospora pubera, Bœck. in Linnæa, xxxvii. p. 528.

Dichromena humboldtiana, Nees, Cyper. Bras. p. 111.

Dichromena radicans, Jungh. ex Ch. et Schl. in Linnæa, vi. p. 28; Liebm. Mexicos Halvgr. p. 59.

Dichromena tenuis, Steud. Cyper. p. 135.

South Mexico, woods at 3000 feet in the Cordillera of Oaxaca (*Galeotti*, 5719), Jalapa, Vera Cruz (*Linden*, 78, 105), Vera Cruz to Orizaba (*Müller*, 1956, 1957 bis), Santa Maria, Tlapacoyo, Hacienda de Jovo &c. (*Liebmann*), region of Orizaba (*Bourgeau*, 2585), Sierra San Pedro Nolasco &c. (*Jurgensen*, 658), without locality (*Ghiesbreght; Harris*); Costa Rica (ex *Bœckeler*).—Venezuela to Guiana and Brazil, and in the West Indies. Hb. Kew.

We should regard the Mexican plant as specifically distinct from the South-American and West-Indian with which Bœckeler associates it, for all the specimens that we have seen are at once distinguishable by their slender habit and solitary spikelet; but as we have not had an opportunity of examining authentic specimens of Vahl's proposed species, we follow Bœckeler in the synonymy.

[*Psilocarya,* a genus closely allied to *Dichromena,* is restricted by Bentham and Hooker to four species, three of which inhabit North America and one Cuba; the Mexican species referred by Bœckeler to this genus being placed in *Rhynchospora.*]

5. FIMBRISTYLIS.

Fimbristylis, Vahl, Enum. Pl. ii. p. 285; Benth. et Hook. Gen. Plant. iii. p. 1048.

A large genus generally diffused in Tropical countries; rare in Temperate and absent from Frigid regions. About 300 species have been published; many of them, however, are repetitions or mere varieties, and Bentham and Hooker estimate the number to be retained at barely 200.

1. **Fimbristylis autumnalis,** Rœm. et Schult. Syst. Veg. ii. p. 97; Kunth, Enum. Pl. ii. p. 227; Bœck. in Linnæa, xxxvii. p. 38; S. Wats. in Proc. Am. Acad. xviii. p. 171; Liebm. Mexicos Halvgr. p. 50; Schl. in Bot. Zeit. 1849, p. 136.

Scirpus autumnalis, Linn. Mant. p. 180.

Trichelostylis mucronulata, Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 355.

Canada to Texas.—South Mexico, Hacienda de la Laguna (*Schiede*), Potrero de Consoquitla (*Liebmann*).—Venezuela to Brazil; West Indies; Tropical Asia; Polynesia.

We have seen no Mexican specimens that we could refer with certainty to this species.

2. **Fimbristylis capillaris,** A. Gr. Man. Bot. Northern U. S. ed. 5, p. 567; S. Wats. in Proc. Am. Acad. xviii. p. 171.

Fimbristylis capillacea, Hochst.; Steud. Cyper. p. 111.
Scirpus capillaris, Linn. Mant. p. 321; Bœck. in Linnæa, xxxvi. p. 759.
Isolepis capillaris, Rœm. et Schult. Syst. Veg. ii. p. 118; Kunth, Enum. Pl. ii. p. 211.
Scirpus tenuifolius, Rudge, Pl. Guian. p. 18, t. 22.
Oncostylis tenuifolia, Liebm. Mexicos Halvgr. p. 51.
Isolepis bufonia, H. B. K. Nov. Gen. et Sp. i. p. 222.
Isolepis asperula, H. B. K. Nov. Gen. et Sp. i. p. 221; Jungh. in Linnæa, vi. p. 26.
Oncostylis truncata, O. tenuifolia, O. dubia, O. ciliata, et *O. arenaria,* Nees, Cyper. Bras. pp. 83–85.

Canada southward.—North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 915, 916); South Mexico, region of Orizaba and Pedregal near the city of Mexico (*Bourgeau*, 433, 2632), Tacubaya (*Schaffner*), Consoquitla, Chinantla and Tuzamapa (*Liebmann*).—Colombia to Peru, Guiana, and Brazil, and in the West Indies; also in Tropical Africa and Temperate and Tropical Asia. Hb. Kew.

3. **Fimbristylis castanea,** Vahl, Enum. Pl. ii. p. 292; Kunth, Enum. Pl. ii. p. 236; Bœck. in Linnæa, xxxvii. p. 18.

Fimbristylis spadicea, Auct. American. fide Bœckeler.

New Jersey to Texas.—Mexico (ex *Bœckeler*).

This species, *F. ferruginea*, Vahl, *F. spadicea*, Vahl, and *F. pentastachya*, Bœck., are very closely allied and difficult to distinguish from each other, and probably some of the specimens referred by Liebmann to *F. ferruginea* are really *F. castanea*.

4. **Fimbristylis crassipes,** Bœck. in Linnæa, xxxviii. p. 392.

Mexico (*Hahn*).

5. **Fimbristylis ferruginea,** Vahl, Enum. Pl. ii. p. 291; Kunth, Enum. Pl. ii. p. 236; Liebm. Mexicos Halvgr. p. 49; Bœck. in Linnæa, xxxvii. p. 16; Griseb. Fl. Brit. W. Ind. p. 572.

This is recorded from Mexico by Kunth, and it is probable that Linden's 1332 from Tabasco is what Bœckeler regards as this species, which on the same authority is generally dispersed in warm countries.

6. **Fimbristylis miliacea,** Vahl, Enum. Pl. ii. p. 287; Kunth, Enum. Pl. ii. p. 230; Liebm. Mexicos Halvgr. p. 51; Bœck. in Linnæa, xxxvii. p. 43.

Guatemala, Chojojá, near Mazatenango (*Bernoulli*, 435); Nicaragua, neighbourhood of Granada (*Lévy*), Javali (*Tate*, 513); Panama, near the city of Panama (*Seemann*, 139), Chagres (*Fendler*, 347).—Tropical Asia and Australia, and in the Mascarene Islands. Hb. Kew.

7. **Fimbristylis monostachya,** Hassk. Pl. Jav. Rar. p. 61; Benth. Fl. Austr. vii. p. 308.

Abildgaardia monostachya, Vahl, Enum. Pl. ii. p. 296; Bœck. in Linnæa, xxxvii. p. 53; Liebm. Mexicos Halvgr. p. 48; Griseb. Fl. Brit. W. Ind. p. 569.

South Mexico, near Tuzamapa and Hacienda de Buenavista (*Liebmann*).—Generally dispersed in the Tropics, and extending into some Extratropical Regions. Hb. Kew.

Liebmann's specimens are the only ones we have seen from within our limits.

8. **Fimbristylis pentastachya,** Bœck. in Flora, 1857, p. 36, et in Linnæa, xxxvii. p. 17.

South Mexico, Vera Cruz (*Sartorius*).

We have seen no authenticated specimens of this species, but from the description Linden's 265, from Mirador, is probably it.

9. **Fimbristylis polymorpha,** Bœck. in Linnæa, xxxvii. p. 14.

Fimbristylis brizoides, Nees et Meyen, Cyper. Bras. p. 74; Liebm. Mexicos Halvgr. p. 50, cum var. *pumila.*

Fimbristylis juncifolia, Presl, Reliq. Hænk. i. p. 190.

Fimbristylis humboldtii, Presl, l. c.

Very widely diffused in Tropical and Temperate Regions, and common in Mexico and Central America. Hb. Kew.

[*F. preslii*, Kunth, Enum. Pl. ii. p. 228 (*Abildgaardia pubescens*, Presl, Reliq. Hænk. i. p. 180), recorded from Mexico and Luzon, is unknown to us.]

10. **Fimbristylis spadicea,** Vahl, Enum. Pl. ii. p. 294; Kunth, Enum. Pl. ii. p. 237; Bœck. in Linnæa, xxxvii. p. 19.

Georgia to Texas.—Mexico and Costa Rica (ex *Bœckeler*).—Colombia to Guiana and Brazil, and in the West Indies.

11. **Fimbristylis sublateralis,** Steud. Cyper. p. 114.

Guatemala (*Duchassaing*).

12. **Fimbristylis vahlii,** Link; Kunth, Enum. Pl. ii. p. 224; Liebm. Mexicos Halvgr. p. 51; Bœck. in Linnæa, xxxvii. p. 8.

Florida to Texas.—South Mexico, Antigua, Vera Cruz (*Liebmann*).—Guiana.

13. **Fimbristylis vestita,** Hemsl.

Scirpus vestitus, Reichb. in Weigelt. Pl. Surinam. ex Bœck. in Linnæa, xxxvi. p. 754.

Oncostylis hispida, Liebm. Mexicos Halvgr. p. 52.

Isolepis vestita, Kunth, Enum. Pl. ii. p. 210.

Isolepis hispida, Steud. Cyper. p. 104.

South Mexico, Mirador (*Liebmann*).—Guiana; Brazil. Hb. Kew.

6. SCIRPUS.

Scirpus, Linn. Gen. Plant. n. 67; Benth. et Hook. Gen. Plant. iii. p. 1049.

This genus is generally dispersed and is numerous in species, upwards of 300 having been described, though many of them (a third according to Bentham and Hooker) should be reduced.

1. **Scirpus berlandieri,** Steud. Cyper. p. 103.

South Mexico, Tampico (*Berlandier*).

2. **Scirpus cubensis,** Pœppig et Kunth ex Kunth, Enum. Pl. ii. p. 172; Griseb. Cat. Pl. Cub. p. 240; Benth. et Hook. Gen. Pl. iii. p. 1050.

Anosporum cubense, Bœck. in Linnæa, xxxvi. p. 413.

South Mexico, Vera Cruz (*Hahn*); Guatemala, Dueñas (*Godman & Salvin*).—Widely dispersed in South America and the West Indies; also occurring in Tropical Africa. Hb. Kew.

3. **Scirpus** (§ **Isolepis**) **cyperoides,** Hemsl. n. sp.

Species insignis facie *Cyperi drummondii* et *C. acuminati,* sed species vera *Scirpi* spiculæ glumis subquinquefariam imbricatis.

Herba perennis, cæspitosa, undique glabra; *folia* plana, usque ad 4 lineas lata, sursum longe attenuata, 6–12 poll. longa, marginibus scabridis; *culmi* teretes vel compressi, nec angulati, sæpius folia longe superantes, usque ad bipedales, apice capitulis spicularum 3–6 subumbellatim congestis, uno (vel interdum pluribus) sessili, reliquis inæqualiter pedunculatis, rarius capitulo solitario; *involucri bracteæ* paucæ, inæquales, capitulum superantes; *spiculæ* numerosissimæ, multifloræ, arctissime congestæ; *glumæ* subquinquefariam imbricatæ, naviculares, carinatæ, abrupte acuminatæ, atrofuscæ, cum carina viridi; *stamen* sæpissime (an semper?) unicum; *styli* 3; *nux* sessilis, brevis, acute triquetra, lævis.—*Cyperus* ——?, S. Wats. in Proc. Am. Acad. xviii. p. 169.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 905), Pozos (*Schaffner*, 566).

4. **Scirpus heterocarpus,** S. Wats. in Proc. Am. Acad. xviii. p. 171.

North Mexico, Peñasco, San Luis Potosi (*Schaffner*, 573); South Mexico, Orizaba (*Botteri*, 778). Hb. Kew.

5. **Scirpus lacustris,** Linn. Sp. Pl. ed. 1, p. 48; Bœck. in Linnæa, xxxvi. p. 712; Bot. U.S. & Mex. Bound. Surv. p. 228; S. Wats. Bot. Calif. ii. p. 217.

Scirpus validus, Vahl, Enum. Pl. ii. p. 268; Kunth, Enum. Pl. ii. p. 165.

North America.—South Mexico (*Hartweg; Bourgeau*, 525).—Widely dispersed in the Old World. Hb. Kew.

6. **Scirpus melanocarpus,** Bœck. in Flora, 1857, p. 37 (sub *Holoschæno*).

South Mexico, Mirador, Vera Cruz.

7. **Scirpus parvulus,** Rœm. et Schult. Syst. Veg. i. p. 124; Bœck. in Linnæa, xxxvi. p. 477.

North America.—Mexico (*Berlandier; Liebmann*).—Europe.

8. **Scirpus olneyi,** A. Gr. in Pl. Lindh. p. 30; Torr. Bot. U. S. & Mex. Bound. Surv. p. 228; Bœck. in Linnæa, xxxvi. p. 710; S. Wats. Bot. Calif. ii. p. 218.

California to Texas.—Mexico (fide *Watson* et *Bœckeler*).

9. **Scirpus pseudo-junciformis,** Bœck. in Flora 1857, p. 35 (sub *Isolepide*).

South Mexico, Vera Cruz.

10. **Scirpus pungens,** Vahl, Enum. Pl. ii. p. 255; Bœck. in Linnæa, xxxvi. p. 708; Torr. Bot. U. S. & Mex. Bound. Surv. p. 228; S. Wats. Bot. Calif. ii. p. 218.

North America.—Mexico, Leon (*Hartweg*).—South America; Europe; Australia; New Zealand. Hb. Kew.

11. **Scirpus riparius,** Presl, Reliq. Hænk. i. p. 193; Bœck. in Linnæa, xxxvi. p. 717; S. Wats. Bot. Calif. ii. p. 217.

North America.—Mexico (ex *Bœckeler*).—South America; Mediterranean Region; Africa; Australia.

12. **Scirpus supinus,** Linn. Sp. Pl. ed. 1, p. 49; Bœck. in Linnæa, xxxvi. p. 699; S. Wats. in Proc. Am. Acad. xviii. p. 171.

North America.—North Mexico, Peñasco, San Luis Potosi (*Schaffner*, 571).—Widely dispersed in the Old World.

13. **Scirpus tenuispicatus,** Bœck. in Linnæa, xxxvi. p. 740.

South Mexico, valley of Mexico (*Schaffner?*).

In addition to the foregoing there are probably several other species of the genus within our limits, including *S. maritimus*, Linn., a very widely dispersed one. Further there are some doubtful plants, published under *Isolepis*, from Mexico. Thus:—*Isolepis echinulata*, Kunth, Enum. Pl. ii. p. 205; *Isolepis junciformis*, H. B. K. Nov. Gen. et Sp. i. p. 222 (*Oncostylis*, Liebm. Mexicos Halvgr. p. 52); and *I. panamensis*, Presl, Reliq. Hænk. i. p. 351 (*I. corymbosa*, Presl, l. c. p. 188).

7. ERIOPHORUM.

Eriophorum, Linn. Gen. Plant. n. 68; Benth. et Hook. Gen. Plant. iii. p. 1052.

A genus of about ten species inhabiting Europe, extratropical Asia, and North America.

1. **Eriophorum cyperinum,** Linn. Sp. Pl. ed. 2, p. 77; Benth. et Hook. Gen. Pl. iii. p. 1052.

Scirpus cyperinus, Kunth, Enum. Pl. ii. p. 170.

Scirpus eriophorus, Michx. Fl. Bor.-Am. i. p. 33; Bœck. in Linnæa, xxxvi. p. 731; Chapm. Fl. Southern U. S. p. 521.

Trichophorus cyperinum, Pers. Syn. Pl. i. p. 69; Liebm. Mexicos Halvgr. p. 58.

Canada southward.—South Mexico, San Antonio Huatusco at 4500 feet (*Liebmann*).

We have seen no Mexican specimens of this remarkable and very distinct sedge.

8. FUIRENA.

Fuirena, Rottb. Descr. et Ic. p. 70, t. 19. fig. 3; Benth. et Hook. Gen. Plant. iii. p. 1053.

Between twenty and thirty species, generally diffused in warm countries.

1. **Fuirena hexachæta,** Schl. in Linnæa, xix. p. 69, et Bot. Zeit. 1849, p. 135; Steud. Cyper. p. 127; Liebm. Mexicos Halvgr. p. 58.

SOUTH MEXICO, valley of Toluca near La Ventilla (*Schiede*).

2. **Fuirena simplex,** Vahl, Enum. Pl. ii. p. 384; Kunth, Enum. Pl. ii. p. 183; Bœck. in Linnæa, xxxvii. p. 105.

Fuirena obtusiflora et *F. schiedeana,* Kunth, Enum. Pl. ii. p. 183; Schl. in Linnæa, xix. p. 69; Liebm. Mexicos Halvgr. p. 58.

SOUTH MEXICO, Vera Cruz (*Schiede; Ehrenberg*).—CUBA.

3. **Fuirena squarrosa,** Michx. Fl. Bor.-Am. i. p. 37; Kunth, Enum. Pl. ii. p. 184; Bœck. in Linnæa, xxxvii. p. 106; S. Wats. in Proc. Am. Acad. xviii. p. 171; Chapman, Fl. Southern U. S. p. 514 (varietates).

CANADA southward on the eastern side of the continent.—NORTH MEXICO, Monclova, Coahuila (*Palmer*, 1336), San Rafael, San Luis Potosi (*Schaffner*, 567); SOUTH MEXICO, Regla (*Liebmann*). Hb. Kew.

4. **Fuirena umbellata,** Rottb. Descr. et Ic. p. 70, t. 19. fig. 3; Kunth, Enum. Pl. ii. p. 185; Bœck. in Linnæa, xxxvii. p. 110; Griseb. Fl. Brit. W. Ind. p. 573.

Fuirena tereticulmis, Presl, Reliq. Hænk. i. p. 186; Liebm. Mexicos Halvgr. p. 59.

SOUTH MEXICO, Acapulco (*Hœnke*); GUATEMALA, Dueñas (*Salvin*); PANAMA, Lion Hill (*S. Hayes*, 594), Chagres (*Fendler*, 353).—Generally dispersed in the TROPICS. Hb. Kew.

9. HEMICARPHA.

Hemicarpha, Nees in Edinb. New Phil. Journ. xvii. p. 263, et in Wight, Contrib. Bot. Ind. p. 70; Benth. et Hook. Gen. Plant. iii. p. 1053.

There are three species of this genus, two of which have a wide range in warm countries, and the third is of recent discovery in California.

1. **Hemicarpha subsquarrosa,** Nees, Cyper. Bras. p. 61, t. 4. fig. 1; Griseb. Fl. Brit. W. Ind. p. 572; S. Wats. in Proc. Am. Acad. xviii. p. 171; Torr. Bot. U. S. & Mex. Bound. Surv. p. 229; S. Wats. Bot. Calif. ii. p. 220.

Scirpus subsquarrosus, Muehlenb. Gram. p. 39.
Scirpus micranthus, Vahl, Enum. Pl. ii. p. 254; Bœck. in Linnæa, xxxvi. p. 499.
Isolepis subsquarosus, Schrad. in Schult. Mant. ii. p. 64.
Hemicarpha drummondii, Nees, Cyper. Bras. p. 62.
Isolepis cæspitula, Liebm. Mexicos Halvgr. p. 49.

ILLINOIS southward, and CALIFORNIA eastward to FLORIDA.—NORTH MEXICO, San Luis Potosi (*Schaffner*, 570); SOUTH MEXICO, Trapiche de la Concepcion (*Liebmann*); GUATEMALA, Mazatenango (*Bernoulli*).—COLOMBIA to PERU, BRAZIL, and GUIANA, and in the WEST INDIES.

10. LIPOCARPHA.

Lipocarpha, R. Br. in Append. Tuckey's Congo, p. 459; Benth. et Hook. Gen. Plant. iii. p. 1054.

Six or seven species widely spread in Tropical and Subtropical regions.

1. **Lipocarpha sphacelata,** Kunth, Enum. Pl. ii. p. 267; Bœck. in Linnæa, xxxvii. p. 116 (varietates).

Hypaelyptum sphacelatum, Vahl, Enum. Pl. ii. p. 283.
Hypoelytrum sphacelatum, Presl, Reliq. Hænk. i. p. 184.
Lipocarpha triceps et *L. gracilis,* Nees, Cyper. Bras. p. 64.
Lipocarpha mexicana, Liebm. Mexicos Halvgr. p. 47.

South Mexico, region of Orizaba (*Bourgeau*, 2739; *Müller*, 1969), Mirador (*Liebmann*); Guatemala, Chojoja near Mazatenango (*Bernoulli*, 436); Panama, Chagres (*Fendler*, 344, 346), near the city of Panama (*Seemann*, 146).—Southward to Brazil. Hb. Kew.

11. HYPOLYTRUM.

Hypolytrum, Rich. in Pers. Syn. Pl. i. p. 70; Benth. et Hook. Gen. Plant. iii. p. 1054.

Of this genus there are about twenty-five species, widely dispersed in Tropical and Subtropical regions of both hemispheres.

1. **Hypolytrum nicaraguense,** Liebm. Mexicos Halvgr. p. 47; Steud. Cyper. p. 133.

Nicaragua, on the banks of the Rio San Juan (*Œrsted*).

We have not seen an authentic example of this species, but in the Kew Herbarium there are specimens from Chagres, Panama (*Fendler*, 356), which may be it.

12. REMIREA.

Remirea, Aubl. Pl. Guian. i. p. 44, t. 16; Benth. et Hook. Gen. Plant. iii. p. 1058.

A monotype.

1. **Remirea maritima,** Aubl. Pl. Guian. i. p. 44, t. 16; Kunth, Enum. Pl. ii. p. 139; Bœck. in Linnæa, xxxv. p. 436; Griseb. Fl. Brit. W. Ind. p. 569.

Nicaragua, Greytown (*Tate*); Panama, Chagres (*Fendler*, 339).—Maritime districts in South America and the West Indies, and Tropical Africa, Asia, and Australia. Hb. Kew.

13. RHYNCHOSPORA.

Rhynchospora, Vahl, Enum. Pl. ii. p. 229; Benth. et Hook. Gen. Plant. iii. p. 1058.

A genus of between 150 and 200 species, generally dispersed in warm countries, with a few species in the North Temperate zone, both in America and the Old World.

1. **Rhynchospora aristata,** Bœck. in Flora, 1857, p. 36, et in Linnæa, xxxvii. p. 639.

Chætospora aurea, Jungh. in Linnæa, vi. p. 28, fide Bœckeler.

South Mexico, Jalapa (*Schiede*), Vera Cruz (*Sartorius*), Mirador (*Liebmann*).

We have not seen an authenticated specimen of this species, nor have we seen Schiede's specimen, which may be distinct from *R. aurea*, Vahl.

2. **Rhynchospora armerioides,** Presl, Reliq. Hænk. i. p. 197, t. 31. fig. 2; Kunth, Enum. Pl. ii. p. 289; Bœck. in Linnæa, xxxvii. p. 540.

Haplostylis armeriæflora, Nees, Cyper. Bras. p. 126.

Panama (*Hænke; Seemann*, 145).—Colombia to Brazil. Hb. Kew.

3. **Rhynchospora aurea,** Vahl, Enum. Pl. ii. p. 229; Schl. in Bot. Zeit. 1849, p. 162; Bœck. in Linnæa, xxxvii. p. 626.

Calyptrostylis fascicularis et *C. florida,* Nees, Cyper. Bras. p. 139; Liebm. Mexicos Halvgr. p. 64.

Chætospora aurea, H. B. K. Nov. Gen. et Sp. i. p. 231; Jungh. in Linnæa, vi. p. 28.

Scirpus corymbosus, Linn. Amœn. Acad. iv. p. 303.

Schœnus surinamensis, Rottb. Descr. et Ic. p. 68, t. 21. fig. 1.

South Mexico, neighbourhood of Jalapa (*Schiede; Galeotti*); Nicaragua, Greytown (*Tate*, 19); Panama, Aspinwall (*S. Hayes*, 591).—Colombia to Buenos Ayres and throughout the West Indies; also widely spread in the Tropics of the Old World. Hb. Kew.

4. **Rhynchospora barbata,** Kunth, Enum. Pl. ii. p. 290; Bœck. in Linnæa, xxxvii. p. 545; Griseb. Fl. Brit. W. Ind. p. 574.

Schœnus barbatus, Vahl, Eclog. Amer. ii. p. 4.

Haplostylis barbata, Nees, Cyper. Bras. p. 128.

Panama, Rio Grande station (*S. Hayes*, 470), near the city of Panama (*Seemann*, 142). —Colombia to Guiana and Brazil, and in the West Indies. Hb. Kew.

5. **Rhynchospora cephalotes,** Vahl, Enum. Pl. ii. p. 237; Bœck. in Linnæa, xxxvii. p. 630; Kunth, Enum. Pl. ii. p. 301; Griseb. Fl. Brit. W. Ind. p. 573.

Schœnus cephalotes, Rottb. Descr. et Ic. p. 61, t. 20.

Panama, Chagres (*Fendler*, 361), Isla de Coiba (*Seemann*).—Guiana; Brazil; Trinidad. Hb. Kew.

6. **Rhynchospora eximia,** Bœck. in Linnæa, xxxvii. p. 601.

Dichromena schiedeana, Kunth, Enum. Pl. ii. p. 282; Schl. in Bot. Zeit. 1849, p. 161.

Chætospora ferruginea, Jungh. in Linnæa, vi. p. 28, partim.

Psilocarya schiedeana, Liebm. Mexicos Halvgr. p. 60.

South Mexico, Hacienda de la Laguna (*Schiede*), Potrero de Consoquitla, Mirador, and Hacienda de Buenavista (*Liebmann*); Panama, near the city of Panama (*Seemann*, 140), Empire station (*S. Hayes*). Hb. Kew.

7. **Rhynchospora glauca,** Vahl, Enum. Pl. ii. p. 233; Bœck. in Linnæa, xxxvii. p. 585.

Rhynchospora gracilis, Vahl, Enum. Pl. ii. p. 234; Liebm. Mexicos Halvgr. p. 65.

Chætospora ferruginea, Jungh. in Linnæa, vi. p. 28, partim.

North Mexico, San Pedro Tepinapa (*Liebmann*), Mirador, Vera Cruz (*Linden*, 276),

without locality (*Harris*).—Widely dispersed in TROPICAL and SUBTROPICAL REGIONS in both hemispheres. Hb. Kew.

Bœckeler (Linnæa, xxxvii. p. 581) refers some of the specimens cited above to *R. punctata*, Elliott.

8. **Rhynchospora hoffmanni,** Bœck. in Linnæa, xxxvii. p. 637.

COSTA RICA, Volcan de Barba (*Hoffmann*).

9. **Rhynchospora jubata,** Liebm. Mexicos Halvgr. p. 66.

SOUTH MEXICO, San Antonio Huatusco and San Juan Coscomatepec, 4500 to 6000 feet (*Liebmann*).

10. **Rhynchospora kunthii,** Nees in Linnæa, ix. p. 297; Kunth, Enum. Pl. ii. p. 296; Schl. in Bot. Zeit. 1849, p. 165; Liebm. Mexicos Halvgr. p. 67; Bœck. in Linnæa, xxxvii. p. 588.

SOUTH MEXICO, San Salvador, between Jalapa and Perote (*Schiede*), Chinantla, Puebla 7000 feet (*Liebmann*). Hb. Kew.

11. **Rhynchospora mexicana,** Steud. Cyper. p. 144.

Haplostylis mexicana, Liebm. Mexicos Halvgr. p. 61.

SOUTH MEXICO, between Galera and Pochutla, Oaxaca at 1000 feet (*Liebmann*). Hb. Kew.

12. **Rhynchospora marginata,** Steud. Cyper. p. 142.

Cephaloschœnus marginatus, Liebm. Mexicos Halvgr. p. 62.

SOUTH MEXICO, between Lacoba and Jocotepec (*Liebmann*). Hb. Kew.

13. **Rhynchospora micrantha,** Vahl, Enum. Pl. ii. p. 231 (excl. synon. Michauxiana); Bœck. in Linnæa, xxxvii. p. 609.

Haloschœnus sparsus et *H. pygmæus,* Nees in Linnæa, ix. p. 296; Liebm. Mexicos Halvgr. p. 61.
Dichromena micrantha, Kunth, Enum. Pl. ii. p. 278.

SOUTH MEXICO, Guatulco and Consoquitla (*Liebmann*); GUATEMALA, Chilion, near Mazatenango (*Bernoulli*, 413); PANAMA, Empire station (*S. Hayes*, 276).—BRAZIL. Hb. Kew.

14. **Rhynchospora paniculifera,** Steud. Cyper. p. 146.

Calyptrostylis paniculata, Liebm. Mexicos Halvgr. p. 64.

SOUTH MEXICO, between Huitamalco and Tiuzutlan, Puebla at 5000 feet (*Liebmann*). Hb. Kew.

15. **Rhynchospora polycephala,** Wydler ex Kunth, Enum. Pl. ii. p. 291; Bœck. in Linnæa, xxxvii. p. 552.

Ephippiorhynchium polycephalum, Nees, Cyper. Bras. p. 134, t. 12; Liebm. Mexicos Halvgr. p. 63.
Chætospora triceps, Jungh. in Linnæa, ix. p. 29, fide Liebm. l. c.

SOUTH MEXICO, Mesachica (*Schiede*), Potrero de Consoquitla, Mirador, Hacienda de Tuzamapa and Buenavista (*Liebmann*). Hb. Kew.

16. **Rhynchospora polyphylla,** Vahl, Enum. Pl. ii. p. 230; Kunth, Enum. Pl. ii. p. 299; Bœck. in Linnæa, xxxvii. p. 635; Griseb. Fl. Brit. W. Ind. p. 575.

Mitrospora polyphylla, Nees in Linnæa, ix. p. 295; Liebm. Mexicos Halvgr. p. 65.

Rhynchospora adulta, Schl. in Bot. Zeit. 1849, p. 166.

South Mexico, Mirador (*Liebmann*), San Juan del Rio (*Bourgeau*, 2977).—Venezuela to Peru, and in the West Indies. Hb. Kew.

17. **Rhynchospora presliana,** Steud. Cyper. p. 142.

Rhynchospora globosa, Presl, Reliq. Hænk. i. p. 198, t. 36, non Rœm. et Schult. fide Steud. l. c.

Mexico (*Hænke*).

18. **Rhynchospora pungens,** Liebm. Mexicos Halvgr. p. 65; Bœck. in Linnæa, xxxvii. p. 574.

South Mexico, Mirador (*Liebmann*). Hb. Kew.

19. **Rhynchospora robusta,** Bœck. in Linnæa, xxxvii. p. 616.

Dichromena robusta, Kunth, Enum. Pl. ii. p. 283.

Psilocarya robusta, Nees, Cyper. Bras. p. 116.

South Mexico, region of Orizaba (*Bourgeau*, 2735), without locality (*Bates*).—Venezuela; Brazil; Paraguay. Hb. Kew.

20. **Rhynchospora sartoriana,** Bœck. in Flora, 1857, p. 36.

South Mexico, Vera Cruz (*Sartorius*).

21. **Rhynchospora schaffneri,** Bœck. in Linnæa, xxxvii. p. 575; S. Wats. in Proc. Am. Acad. xviii. p. 171.

North Mexico, in the San Rafael mountains, San Luis Potosi (*Schaffner*, 548), region of San Luis Potosi (*Parry & Palmer*, 918); South Mexico, valley of Mexico (*Schaffner*). Hb. Kew.

There is some doubt whether the North-Mexican plant is the same as that described by Bœckeler.

22. **Rhynchospora schiedeana,** Kunth, Enum. Pl. ii. p. 300; Bœck. in Linnæa, xxxvii. p 636.

Chætospora, sp., Jungh. in Linnæa, vi. p. 29.

Calyptrostylis schiedeana, Liebm. Mexicos Halvgr. p. 65.

South Mexico, Mirador (*Liebmann; Linden*, 68), Cordillera of Vera Cruz at 3500 feet (*Galeotti*, 5790), San Cristobal near Orizaba (*Bourgeau*, 3191), without locality (*Harris*). Hb. Kew.

23. **Rhynchospora tenuis,** Willd.; Bœck. in Linnæa, xxxvii. p. 610.

Dichromena gracilis, Kunth, Enum. Pl. ii. p. 280.

Haloschœnus caracasanus, Liebm. Mexicos Halvgr. p. 61, non *Dichromena caracasana,* Kunth.

Haloschœnus capillaris, Nees in Linnæa, ix. p. 296.

South Mexico, Mirador (*Liebmann*), Vera Cruz (*Sartorius*).—Southward to Buenos Ayres. Hb. Kew.

24. **Rhynchospora vulcani,** Bœck. in Linnæa, xxxvii. p. 638.

COSTA RICA, Volcan de Barba (*Hoffmann*).

14. CLADIUM.

Cladium, P. Br. Hist. Jam. p. 114; Benth. et Hook. Gen. Plant. iii. p. 1065.

Of this genus about thirty species are known, and they are very widely dispersed in Temperate and Tropical countries, though by far the larger number of them are restricted to the Australasian region.

1. **Cladium mariscus,** R. Br. Prodr. Fl. Nov. Holl. p. 236; Kunth, Enum. Pl. ii. p. 303; Bœck. in Linnæa, xxxviii. p. 232.

Schœnus mariscus, Linn. Sp. Pl. ed. 1, p. 42.

BERMUDAS.—PANAMA, Aspinwall (*S. Hayes*, 393).—SOUTH AMERICA; WEST INDIES; EUROPE; ASIA; AUSTRALIA; POLYNESIA. Hb. Kew.

Bœckeler, l. c., refers both *C. occidentale*, Schrad., and *C. effusus*, Torr., to this species, thus giving it a wide range in North America.

[Several exclusively Tropical-American genera, placed between *Cladium* and *Scleria*, are not known to be represented within our limits. They are:—*Lagenocarpus*, *Cryptangium*, *Flintelmannia*, *Cephalocarpus*, *Pteroscleria*, *Becquerelia*, and *Hoppia*.]

15. CALYPTROCARYA.

Calyptrocarya, Nees in Linnæa, ix. p. 304; Benth. et Hook. Gen. Plant. iii. p. 1069.

A genus of three or four species, restricted to Tropical America.

1. **Calyptrocarya palmetto,** Nees, Cyper. Bras. p. 195.

Becquerelia glomerulata, Brongn. in Duperr. Voyage, Bot. Phaner. p. 163.

Calyptrocarya longifolia, Bœck. in Linnæa, xxxviii. p. 431, sed certe non *Schœnus longifolius*, Rudge, Pl. Guian. t. 16.

PANAMA, Chagres (*Fendler*, 357).—GUIANA; BRAZIL; WEST INDIES. Hb. Kew.

Bentham and Hooker refer Rudge's *Schœnus longifolius* (*Calyptrocarya? longifolia*, Kunth, Enum. Pl. ii. p. 365), a very distinct plant, to *Hoppia*; and Bœckeler's *Hoppia microcephala* is evidently the same plant.

16. SCLERIA.

Scleria, Berg. in K. Vetensk. Acad. Handl. xxvi. (1765) p. 142, tt. 4 et 5; Benth. et Hook. Gen. Plant. iii. p. 1070.

About 100 species, generally dispersed in Tropical and Subtropical regions, and extending into the Temperate zone in North America.

1. **Scleria anceps,** Liebm. Mexicos Halvgr. p. 69; Steud. Cyper. p. 174; Walp. Ann. iii. p. 696.

SOUTH MEXICO, Potrero de Consoquitla (*Liebmann*).

2. **Scleria asperrima,** Steud. Cyper. p. 170.

Ophryoscleria asperrima, Liebm. Mexicos Halvgr. p. 73; Walp. Ann. iii. p. 697.

NICARAGUA, San Juan (*Ærsted*).

3. **Scleria bourgeaui,** Bœck. in Flora, 1882, p. 29.

SOUTH MEXICO, Borrego, Orizaba (*Bourgeau*, 2740).

4. **Scleria bracteata,** Cav. Ic. v. p. 34, t. 457; Kunth, Enum. Pl. ii. p. 345; Bœck. in Linnæa, xxxviii. p. 515; Griseb. Fl. Brit. W. Ind. p. 579.

Macrolomia bracteata, Nees, Cyper. Bras. p. 182, t. 14; Liebm. Mexicos Halvgr. p. 72.

SOUTH MEXICO, Cordillera of Vera Cruz (*Galeotti*, 5688), Mirador (*Linden*, 281; *Liebmann*); GUATEMALA, Mazatenango (*Bernoulli*, 567); PANAMA (*Seemann*).—Southward to PERU and BRAZIL, and in the WEST INDIES. Hb. Kew.

5. **Scleria coriacea,** Liebm. Mexicos Halvgr. p. 71; Steud. Cyper. p. 179; Walp. Ann. iii. p. 696.

COSTA RICA, Guanacaste (*Ærsted*).

6. **Scleria elongata,** Presl, Reliq. Hænk. i. p. 202; Kunth, Enum. Pl. ii. p. 358; Liebm. Mexicos Halvgr. p. 72; Steud. Cyper. p. 178.

SOUTH MEXICO, Acapulco (*Hænke*).

7. **Scleria foveolata,** Cav. Ic. Pl. v. p. 35; Kunth, Enum. Pl. ii. p. 359; Steud. Cyper. p. 179.

PANAMA (ex *Cavanilles*).

8. **Scleria hirta,** Bœck. in Flora, 1882, p. 29.

SOUTH MEXICO, valley of Cordova (*Schaffner*).

9. **Scleria hirtella,** Swartz, Fl. Ind. Occ. i. p. 93; Griseb. Fl. Brit. W. Ind. p. 579; Kunth, Enum. ii. p. 353; Bœck. in Linnæa, xxxviii. p. 439; Jungh. in Linnæa, vi. p. 29.

Scleria nutans, Willd.; Kunth, Enum. Pl. ii. p. 351.
Hypoporum nutans, Liebm. Mexicos Halvgr. p. 67.
Scleria mollis, Kunth, Enum. Pl. ii. p. 352.
Hypoporum hirtellum, Nees, Cyper. Bras. p. 170.

FLORIDA to TEXAS.—SOUTH MEXICO, Mirador, Vera Cruz (*Linden*, 275; *Liebmann*), Vera Cruz to Orizaba (*Bourgeau*, 2747; *Müller*), Hacienda de la Laguna (*Schiede*).—COLOMBIA to CHILI and BRAZIL, and in the WEST INDIES; also in TROPICAL and SOUTH AFRICA. Hb. Kew.

10. **Scleria liebmannii,** Steud. Cyper. p. 179.

Hypoporum purpurascens, Liebm. Mexicos Halvgr. p. 68; Walp. Ann. iii. p. 697.

SOUTH MEXICO, Mirador and Potrero de Consoquitla, Vera Cruz, and Talea, Oaxaca (*Liebmann*).

11. **Scleria macrocarpa,** Salzm. ; Bœck. in Linnæa, xxxviii. p. 521.

Scleria palmifolia, Hoffmannsegg ; Schl. in Bot. Zeit. 1845, p. 492.

Panama, Chagres (*Fendler*, 360).—Southward to Peru and Brazil. Hb. Kew.

12. **Scleria melaleuca,** Reichb. in Linnæa, vi. p. 29 ; Kunth, Enum. Pl. ii. p. 340 ; Bœck. in Linnæa, xxxviii. p. 480 ; Liebm. Mexicos Halvgr. p. 72.

South Mexico, Hacienda de la Laguna (*Schiede*), Hacienda de Jovo, near Tlapacoyo, Vera Cruz and at Jicaltepec (*Liebmann*); Nicaragua, Chontales (*Tate*); Panama, Chagres (*Fendler*, 358), Empire station (*S. Hayes*, 311).—Colombia to Guiana and Brazil. Hb. Kew.

13. **Scleria mexicana,** Bœck. in Linnæa, xxxviii. p. 500.

Diploscyphus mexicanus, Liebm. Mexicos Halvgr. p. 74; Steud. Cyper. p. 180; Walp. Ann. iii. p. 697.

South Mexico, near Huitamalco and Mirador at 2000 to 3000 feet (*Liebmann*).

14. **Scleria micrococca,** Steud. Cyper. p. 179.

Hypoporum micrococcum, Liebm. Mexicos Halvgr. p. 68.

Nicaragua, near Segovia (*Œrsted*).

15. **Scleria mitis,** Swartz ; Bœck. in Linnæa, xxxviii. p. 520 ; Griseb. Fl. Brit. W. Ind. p. 578.

Ophryoscleria mitis et *O. lucida,* Nees, Cyper. Bras. pp. 183 et 185, t. 25.

Panama, Chagres (*Fendler*, 359), Frijoli station (*S. Hayes*, 496).—Guiana, Brazil, and the West Indies. Hb. Kew.

16. **Scleria panicoides,** Kunth, Enum. Pl. ii. p. 348 ; Bœck. in Linnæa, xxxviii. p. 532.

Schizolepis panicoides, Nees, Cyper. Bras. p. 188.

Panama, Empire station (*S. Hayes*, 317).—Brazil. Hb. Kew.

17. **Scleria pratensis,** Lindl. ; Nees, Cyper. Bras. p. 179, t. 23 ; Griseb. Fl. Brit. W. Ind. p. 577 ; Bœck. in Linnæa, xxxviii. p. 481.

Scleria communis, Kunth, Enum. Pl. ii. p. 340 ; Liebm. Mexicos Halvgr. p. 71.

South Mexico, near Jicaltepec (*Liebmann*); Panama, near the city of Panama (*Seemann*, 125).—Venezuela to Guiana and Brazil, and in the West Indies. Hb. Kew.

18. **Scleria purpureozonata,** Liebm. Mexicos Halvgr. p. 70 ; Steud. Cyper. p. 174 ; Walp. Ann. iii. p. 696.

South Mexico, near San Antonio Huatusco (*Liebmann*).

19. **Scleria reflexa,** H. B. K. Nov. Gen. et Sp. i. p. 232 ; Kunth, Enum. Pl. ii. p. 340 ; Bœck. in Linnæa, xxxviii. p. 503.

Mastigoscleria reflexa, Nees, Cyper. Bras. p. 177 ; Liebm. Mexicos Halvgr. p. 69.

Scleria flagellum, Berg. ; Griseb. Fl. Brit. W. Ind. p. 578.

South Mexico, Vera Cruz (*Liebmann*); Guatemala, Mazatenango (*Bernoulli*, 570); Panama, Empire station (*S. Hayes*, 308).—Venezuela to Guiana and Brazil, and in the West Indies. Hb. Kew.

20. **Scleria scabriuscula,** Schl. in Linnæa, xx. p. 544; Liebm. Mexicos Halvgr. p. 71; Bœck. in Linnæa, xxxviii. p. 457.

Scleria schiedeana, Schl. in Bot. Zeit. 1845, p. 494; Bœck. in Linnæa, xxxviii. p. 491.

Scleria homonyma, Steud. Cyper. p. 179.

South Mexico, Hacienda de la Laguna (*Schiede*).

21. **Scleria setulosociliata,** Bœck. in Flora, 1822, p. 30.

Guatemala, Mazatenango (*Bernoulli*, 567).

We suspect this is not distinct, as a species, from *Scleria bracteata*, to which Bernoulli's 567 is referred in the Kew Herbarium.

22. **Scleria torreyana,** Walp. Am. iii. p. 696; Bœck. in Linnæa, xxxviii. p. 468.

Scleria muehlenbergiana, Steud. Nomencl.; Schl. in Bot. Zeit. 1845, p. 474; Liebm. Mexicos Halvgr. p. 70.

Scléria laxa, Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 376.

Massachusetts southward.—South Mexico, Consoquitla (*Liebmann*), Vera Cruz to Orizaba (*Müller*).—Guiana. Hb. Kew.

23. **Scleria verticillata,** Muehlenb. Gram. p. 266; Kunth, Enum. Pl. ii. p. 353; Bœck. in Linnæa, xxxviii. p. 446.

Hypoporum verticillatum, Nees in Linnæa, ix. p. 303; Torr. in Ann. Lyc. Nat. Hist. N. York, iii. p. 387.

New York southward.—Panama, near the city of Panama (*Seemann*, 144).—Colombia to Brazil and Guiana. Hb. Kew.

17. UNCINIA.

Uncinia, Pers. Syn. Pl. ii. p. 534; Benth. et Hook. Gen. Plant. iii. p. 1072.

A genus of about twenty-five species, inhabiting South Temperate and cold regions, though not represented in South Africa, the Andes northward to Mexico, the West Indies, nor in the Sandwich Islands.

1. **Uncinia mexicana,** Steud. Cyper. p. 243; Clarke in Journ. Linn. Soc. xx. p. 400.

Uncinia jamaicensis, Liebm. Mexicos Halvgr. p. 84; Bœck. in Linnæa, xli. p. 347, partim, non Pers.

Uncinia phleoides, C. A. Meyer in Bull. Acad. Brux. ix. (reprint, p. 23), non Pers.

South Mexico, Mirador, Vera Cruz, 3000 to 4000 feet (*Galeotti*, 5720; *Liebmann*); Guatemala, Chilasco (*Godman & Salvin*); Costa Rica (*Hoffmann*).

This is very near *U. jamaicensis*, the only West-Indian species, which also occurs in

the Andes. Clarke (loc. cit.) says:—"Quasi *U. jamaicensis* forma evolutior, bracteis utriculisque majoribus; præsertim distans foliis latioribus stylobasi pyramidata." Boott also regarded the Mexican species as distinct from the West-Indian, and gave it a manuscript name, having overlooked Steudel's.

18. CAREX.

Carex, Linn. Gen. Plant. n. 1046; Benth. et Hook. Gen. Plant. iii. p. 1073.

Upwards of 800 species are enumerated, and there are probably at least 500 distinct ones; they are generally dispersed in Temperate and Cold regions, including the mountains within the Tropics. In North America they are especially numerous, there being no fewer than 150 within the limits of Gray's 'Manual of the Botany of the Northern United States'—that is to say, in the area north of North Carolina and Tennessee and east of the Mississippi. And the comparatively unexplored California has already yielded seventy-eight species. *Carex* is a genus, too, that is represented in most of the remote oceanic islands, as St. Helena, Tristan da Cunha, Juan Fernandez, and the Sandwich Islands. Some of the species have a very wide range of distribution, whilst a large proportion are local.

1. **Carex acrolepis,** Liebm. Mexicos Halvgr. p. 83; Steud. Cyper. p. 196; Walp. Ann. iii. p. 707.

COSTA RICA, Candelaria (*Ærsted*).

2. **Carex anisostachys,** Liebm. Mexicos Halvgr. p. 78; Steud. Cyper. p. 188; Walp. Ann. iii. p. 705; Bœck. in Linnæa, xl. p. 403.

SOUTH MEXICO, Chinantla, Puebla at 7000 feet (*Liebmann*). Hb. Kew.

3. **Carex cladostachya,** Wahlenb.; Kunth, Enum. Pl. ii. p. 510; Bœck. in Linnæa, xl. p. 361; Griseb. Fl. Brit. W. Ind. p. 580.

Carex mexicana, Presl, Reliq. Hænk. i. p. 204; Liebm. Mexicos Halvgr. p. 88; Boott, Ill. Carex, t. 512; C. A. Meyer in Bull. Acad. Brux. ix. (reprint, p. 22).

Carex polystachya, Boott, Ill. Carex, p. 152, tt. 490, 491 et 492 (fide Bœckeler, l. c.), nec Swartz et Wahlb.

Carex hartwegii, Boott, Ill. Carex, tt. 509, 510.

SOUTH MEXICO, valley of Cordova, San Cristobal and Borrego, Orizaba (*Bourgeau*, 1795, 3026, 3195), Jalapa (*Schiede*), Mirador and Talea, Oaxaca (*Liebmann*); GUATEMALA, barrancas, near the city of Guatemala (*Hartweg*), Baños de los Padres (*Bernoulli*, 293); COSTA RICA (*Hoffmann*).—COLOMBIA; JAMAICA; also in the PHILIPPINE ISLANDS, according to Bœckeler. Hb. Kew.

4. **Carex chordalis,** Liebm. Mexicos Halvgr. p. 81; Steud. Cyper. p. 196; Walp. Ann. iii. p. 706.

SOUTH MEXICO, Hacienda de Castresana, Oaxaca 7500 feet (*Liebmann*). Hb. Kew.

5. **Carex cortesii,** Liebm. Mexicos Halvgr. p. 80; Steud. Cyper. p. 195; Walp. Ann. iii. p. 706.

South Mexico, Cerro de Sempoaltepec, Oaxaca at 10,000 feet (*Liebmann*).

6. **Carex coulteri,** Boott, MSS. in herb. Kew.

"Prope *C. pubescens*, differt perigyniis rostellatis bidentatis, squamis muticis dorso pubescentibus."

South Mexico, Zimapan (*Coulter*, 1620), Santa Fé, valley of Mexico (*Bourgeau*, 671). Hb. Kew.

We may add that it also differs from *C. pubescens*, as figured by Boott, in its relatively much longer narrow leaves.

7. **Carex ehrenbergiana,** Bœck. in Linnæa, xli. p. 175.

Mexico (*Ehrenberg*).

8. **Carex festiva,** Dewey in Sill. Journ. xxix. p. 246; Boott, Ill. Carex, i. p. 26, t. 66; Bœck. in Linnæa, xxxix. p. 73; S. Wats. Bot. Calif. ii. p. 234.

Carex orizabæ et *C. pinetorum*, Liebm. Mexicos Halvgr. p. 75.

Carex propinqua, Nees; Kunth, Enum. Pl. ii. p. 396.

Carex oreades, C. A. Meyer in Bull. Acad. Brux. ix. (reprint, p. 22), absque descriptione.

California to Texas.—South Mexico, Peak of Orizaba at 10,000 to 12,500 feet (*Linden*, 95; *Galeotti*, 5781; *Liebmann*), Real del Monte (*Coulter*, 1622).—Colombia; Chili; Northern Europe; Northern Asia. Hb. Kew.

9. **Carex glomerata,** Thunb. Fl. Cap. i. p. 344; Boott, Ill. Carex, p. 81, t. 222; Bœck. in Linnæa, xxxix. p. 59; S. Wats. Bot. Calif. ii. p. 232.

Carex brongniartii et *C. xalapensis*, Kunth, Enum. Pl. ii. p. 380; Boott, Ill. Carex, p. 124, tt. 401–403.

Carex muricata, Jungh. in Linnæa, vi. p. 29, non Linn.

California.—South Mexico, Jalapa (*Schiede*); Chili; South Africa.

10. **Carex halleriana,** Asso; Boott, Ill. Carex, p. 128, tt. 415, 416; Bœck. in Linnæa, xli. p. 201.

Carex planostachys, Kunze, Suppl. 138, t. 35; Steud. Cyper. p. 232.

Mexico (fide *Bœckeler*).—Europe.

[*Carex heptastachya*, Bœck. in Linnæa, xxxix. p. 114, is recorded from "Merida, Costa Rica (*Moritz*)," but we have little doubt that it should be Merida, Venezuela.]

11. **Carex jamesoni,** Boott in Trans. Linn. Soc. xx. p. 124, et Ill. Carex, p. 109, tt. 334–337.

Carex galeottiana, C. A. Meyer in Bull. Acad. Brux. ix. (reprint, p. 22).

South Mexico, peak of Orizaba at 12,500 feet (*Galeotti*, 5763; *Linden*, 97).—Colombia; Ecuador. Hb. Kew.

12. **Carex liebmanni,** Walp. Ann. iii. p. 705; Steud. Cyper. p. 201.

Carex chlorocarpos, Liebm. Mexicos Halvgr. p. 77, nec Wimmer.

South Mexico, Parada, Sierra de Oaxaca at 8000 to 8500 feet (*Liebmann*).

13. **Carex longicaulis,** Bœck. in Flora, 1882, p. 62.
SOUTH MEXICO, valley of Mexico (*Schaffner*).

14. **Carex melanosperma,** Liebm. Mexicos Halvgr. p. 82; Walp. Ann. iii. p. 707; Steud. Cyper. p. 196.
SOUTH MEXICO, between Huitamalco and Tiuzutlan, Puebla at 5000 feet (*Liebmann*).

15. **Carex muehlenbergii,** Schkuhr, f. 178; Boott, Ill. Carex, p. 124, t. 399, et β. *enervis*, t. 400; Bœck. in Linnæa, xxxix. p. 80.
CANADA southward.—SOUTH MEXICO, Santa Fé, valley of Mexico (*Bourgeau*, 436).—CHILI. Hb. Kew.

16. **Carex œrstedii,** Liebm. Mexicos Halvgr. p. 84; Walp. Ann. iii. p. 708; Steud. Cyper. p. 196.
COSTA RICA, near Cartago (*Œrsted*).

17. **Carex olivacea,** Liebm. Mexicos Halvgr. p. 79; Walp. Ann. iii. p. 706.
SOUTH MEXICO, Vaqueria del Jacale, peak of Orizaba 10,000 feet (*Liebmann*).

18. **Carex physorhyncha,** Steud. Cyper. p. 719.
Carex rhynchophysa, Liebm. Mexicos Halvgr. p. 76; Walp. Ann. iii. p. 705, non C. A. Meyer.
SOUTH MEXICO, Chinantla, Puebla 7500 to 8000 feet (*Liebmann*).

19. **Carex potosina,** Hemsl.
Carex schaffneri, W. Boott in Proc. Am. Acad. xviii. p. 172, non Bœck.
NORTH MEXICO, San Luis Potosi (*Schaffner*, 546). Hb. Kew.

20. **Carex schaffneri,** Bœck. in Flora, 1878, p. 39.
SOUTH MEXICO, valley of Mexico (*Schaffner*).

21. **Carex schiedeana,** Kunze, Suppl. p. 119, t. 30; Bœck. in Linnæa, xl. p. 385; Steud. Cyper. p. 208.
SOUTH MEXICO (*Schiede, Ehrenberg*).

22. **Carex spilocarpa,** Steud. Cyper. p. 195.
Carex maculata, Liebm. Mexicos Halvgr. p. 80; Walp. Ann. iii. p. 706.
SOUTH MEXICO, Volcan de Orizaba at 8000 to 10,000 feet (*Liebmann*).

23. **Carex straminea,** Schkuhr, f. 34 et 174; Bœck. in Linnæa, xxxix. p. 117 (varietates).
Carex leporina, var. *bracteata,* Liebm. Mexicos Halvgr. p. 76.
Carex fœnea, Willd.; Boott, Ill. Carex, p. 118, tt. 375 et 376.
CANADA southward.—SOUTH MEXICO, Jalapa (*Schiede*), Mecapalco, Vera Cruz, Huitamalco and Chinantla, Puebla, Tepitongo and Comaltepec, Oaxaca (*Liebmann*).—COLOMBIA to BRAZIL.

24. **Carex tuberculata,** Liebm. Mexicos Halvgr. p. 82; Walp. Ann. iii. p. 707; Steud. Cyper. p. 196.

South Mexico, Chinantla, Puebla 7000 feet (*Liebmann*).

25. **Carex turbinata,** Liebm. Mexicos Halvgr. p. 77; Walp. Ann. iii. p. 705; Steud. Cyper. p. 219.

South Mexico, Central Cordillera of Oaxaca (*Liebmann*).

26. **Carex viridis,** Jungh. in Linnæa, vi. p. 30; Boott, Ill. Carex, p. 159, t. 522; Bœck. in Linnæa, xl. p. 330.

South Mexico, without locality (*Schiede*); Costa Rica, Volcan de Barba (*Hoffmann*).

27. **Carex vulpinoidea,** Michx. Fl. Bor.-Am. ii. p. 169; Boott, Ill. Carex, p. 124, tt. 404–408; Bœck. in Linnæa, xxxix. p. 94.

Canada southward.—Mexico.—Colombia.

Order CLX. GRAMINEÆ.

Gramineæ, Benth. et Hook. Gen. Plant. iii. p. 1074.

Grasses are spread all over the globe, wherever there is phanerogamic vegetation, from the highest polar regions visited to the tropics, and they are specially characteristic of humid temperate countries. Bentham and Hooker retain 298 genera and estimate the number of distinct species at 3100 to 3200. The Mexican grasses are numerous, and we have been able to use an unpublished monograph of them (which we understand will now shortly appear) by the late Dr. Eugène Fournier. This monograph contains 643 species referred to 123 genera; in this Order, however, as in all the preceding ones, we have usually taken Bentham and Hooker's 'Genera Plantarum' as our standard for genera, so that there is a considerable reduction in the number in this work. With regard to many of the new species described by Fournier which we have had an opportunity of examining, we consider them as varieties undeserving of distinctive names even. Nevertheless we have found his monograph very serviceable in drawing up the present enumeration, though it is probable, from the intricate synonymy of some of the species, that the same plant figures in more than one place. The grasses of the United-States and Mexican Boundary Commission have never been published; and as the specimens of this collection in the Kew Herbarium are not localized, we could not include them. Comparatively little is known of the grasses of Central America, especially of Costa Rica and Nicaragua.

Series A. PANICACEÆ.

Panicaceæ, Benth. et Hook. Gen. Plant. iii. p. 1075.

The grasses belonging to this series are distinguished by the spikelet being articulated with the pedicel below the outer glumes.

Tribe I. PANICEÆ.

Paniceæ, Benth. et Hook. Gen. Plant. iii. pp. 1075 et 1077.

This tribe includes thirty genera, several of which are very numerous in species, and most of which are restricted to tropical and subtropical regions. The genus *Reimaria* consists of four species, inhabiting Tropical South America, Cuba, and Florida, so that it may be expected to occur within our limits.

1. PASPALUM.

Paspalum, Linn. Gen. Plant. n. 75; Benth. et Hook. Gen. Plant. iii. p. 1097.

Upwards of 300 species have been published by various authors; but Bentham and Hooker estimate the real number to be barely 160. They are generally dispersed in tropical and subtropical regions, though by far the greatest concentration of species is in America. The late General Munro partially elaborated this genus and named the collection in the Kew Herbarium.

1. **Paspalum abbreviatum,** Trin. ex Schl. in Linnæa, xxvi. p. 383 (absque descriptione); Fournier, Mex. Pl. Enum., Gram. p. 10.

MEXICO, without locality (*Schiede*).

2. **Paspalum acuminatum,** Raddi, Agrostogr. Bras. p. 25; Döll in Mart. Fl. Bras. ii. 2, p. 97; Kunth, Enum. Pl. i. p. 49.

GUATEMALA, Costa Grande, between San Antonio and San Bernardino (*Bernoulli*, 588).—BRAZIL. Hb. Kew.

3. **Paspalum affine,** Steud. Gram., p. 24 *; Fournier, Mex. Pl. Enum., Gram. p. 12.

SOUTH MEXICO, Oaxaca (ex *Steudel*).

Fournier suggests that this may be *P. tenellum,* Willd.

4. **Paspalum appendiculatum,** Presl, Reliq. Hænk. i. p. 211; Steud. Gram. p. 33.

PANAMA (*Hænke*).

5. **Paspalum compressum,** Nees, Agrostol. Bras. p. 23; Fournier, Mex. Pl. Enum., Gram. p. 7; Seem. Bot. Voy. 'Herald,' p. 223; Griseb. Fl. Brit. W. Ind. p. 541.

Paspalum tristachyon, Lam. Ill. i. p. 176.

Paspalum platycaule, Poir. in Lam. Encycl. v. p. 34; H. B. K. Nov. Gen. et Sp. i. p. 90; Trin. Sp. Gram. Ic. et Descr. i. t. 118.

SOUTH MEXICO, Hacienda de Jovo (*Liebmann*, 202), Orizaba (*Botteri*, 111), Vera Cruz

* This grass, like many other grasses described by Steudel, who had no special knowledge of the Order, may belong to some previously described species; but we have nothing beyond his imperfect descriptions to guide us, therefore we can only cite his names for what they are worth. He neither records collectors' names nor numbers, nor states where the specimens were upon which he founded his species. Dr. Fournier examined Steudel's own herbarium, but he remarks ('Plantas Mexicanas,' Gramineæ, Introduction, p. iii) that he was just as much in the dark as before on many points.

(*Gouin*); NICARAGUA (*Tate*); PANAMA, Empire Station (*S. Hayes*, 243), near the city of Panama (*Seemann*, 120).—Southward to ECUADOR and PARAGUAY, and in the WEST INDIES. Also in TROPICAL AFRICA and the MAURITIUS. Hb. Kew.

Ruprecht (Bull. Acad. Brux. ix., reprint, p. 12) refers Galeotti's 5681 to this species.

β (*spiculis tantum puberulis*), Fournier, Mex. Pl. Enum., Gram. p. 7.

SOUTH MEXICO, Orizaba (*Thomas*), Rio Blanco (*Bourgeau*).

6. **Paspalum conjugatum,** Berg, Act. Helv. vii. p. 129, t. 8; Kunth, Enum. Pl. i. p. 51; Griseb. Fl. Brit. W. Ind. p. 541; Fournier, Mex. Pl. Enum., Gram. p. 6; Ch. et Schl. in Linnæa, vi. p. 31; Trin. Sp. Gram. Ic. et Descr. t. 102.

Paspalum renggeri, Steud. Gram. p. 17.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2752), Mirador, Jicaltepec, and Pital (*Liebmann*, 158, 159, 160, 161), valley of Cordova (*Bourgeau*, 1659), Vera Cruz (*Schiede*); GUATEMALA, Mazatenango (*Bernoulli*, 572), San Gerónimo (*Godman & Salvin*); NICARAGUA, Chontales (*Tate*); PANAMA, Chagres (*Fendler*, 366), Empire Station (*S. Hayes*, 241).—TROPICAL SOUTH AMERICA; WEST INDIES, and TROPICAL AFRICA and ASIA. Hb. Kew.

7. **Paspalum convexum,** Humb. et Bonpl. ex Flügge, Monogr. i. p. 175; H. B. K. Nov. Gen. et Sp. i. p. 91; Kunth, Enum. Pl. i. p. 59; Fournier, Mex. Pl. Enum., Gram. p. 10.

SOUTH MEXICO, Volcan de Jorullo at 1600 feet (*Humboldt & Bonpland*), Orizaba (*Botteri*, 113), Consoquitla (*Liebmann*, 181, in part). Hb. Kew.

8. **Paspalum conspersum,** Schrad. in Schult. Mant. ii. p. 174; Kunth, Enum. Pl. i. p. 63; Fournier, Mex. Pl., Gram. p. 9.

SOUTH MEXICO, Tonaguia, and near Talea (*Liebmann*, 170, 171), Orizaba (*Schaffner*, 192; *Müller*, 2055; *Bourgeau*, 2542).—BRAZIL. Hb. Kew.

β (*panicula laxiore, spicis paucioribus*), Fournier, loc. cit.

SOUTH MEXICO, Cordova (*Bourgeau*, 1657), Consoquitla (*Liebmann*, 167).

9. **Paspalum cordovense,** Fournier, Mex. Pl. Enum., Gram. p. 9.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2161).

10. **Paspalum curvistachyum,** Raddi, Agrostogr. Bras. p. 26 ?; Munro, MSS. in Herb. Kew.

SOUTH MEXICO, Chinantla, Puebla (*Liebmann*, 147). Hb. Kew.

This is doubtless referred by Fournier to some other species, but as the different sets distributed by Liebmann of his collection were numbered independently of each other, we have not been able to ascertain which. Typical *P. curvistachyum*, Raddi, is a native of Brazil.

11. **Paspalum cymbiforme,** Fournier, Mex. Pl. Enum., Gram. p. 5.

SOUTH MEXICO, Mirador, San Pablo and Consoquitla (*Liebmann*, 224, 225, 226).

12. **Paspalum debile,** Michx. Bor.-Am. i. p. 44; Fournier, Mex. Pl. Enum., Gram. p. 10.

Paspalum setaceum, Trin. in Mém. Acad. Sc. Pétersb. série 2, iii. p. 155 (excl. syn. fide Fournieri) et Sp. Gram. Ic. et Descr. t. 129, non Michx.

South Mexico, Vera Cruz (*Gouin*), without locality (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 2159); Nicaragua, Greytown (*Tate*, 48). Hb. Kew.

Chapman (Fl. Southern U.S. p. 571) reduces *Paspalum debile*, Michx., and *P. setaceum*, Michx., to *P. ciliatifolium*, Michx., while Gray (Manual Bot. Northern U.S. ed. 5, p. 645) retains the name *setaceum* with otherwise the same synonymy. As thus limited the species ranges from Massachusetts and Illinois southward through Mexico and the West Indies to Brazil.

13. **Paspalum distichum,** Linn. Amœn. Acad. v. p. 391; Kunth, Enum. Pl. i. p. 52; Benth. Fl. Austr. vii. p. 460; Trin. Sp. Gram. Ic. et Descr. i. t. 112; Munro, MSS. in Bibl. Kew; Griseb. Fl. Brit. W. Ind. p. 541.

Paspalum littorale, R. Br. Prodr. Fl. N. Holl. p. 188.

Paspalum vaginatum, Swartz, Prodr. p. 21, et Fl. Ind. Occ. i. p. 135; Fournier, Mex. Pl. Enum., Gram. p. 6; Trin. Sp. Gram. Descr. et Ic. i. t. 120; Thiele in Linnæa, ix. p. 308.

Oregon and Virginia southward.—North Mexico, Sonora Alta (*Coulter*, 1642); South Mexico, near Tacubaya (*Schaffner*), Vera Cruz (*Gouin*).—Generally dispersed in Tropical and Subtropical Regions. Hb. Kew.

14. **Paspalum effusum,** Nees in Hook. Kew Journ. Bot. ii. p. 104, et in Mart. Fl. Bras. ii. 2, p. 53; Fournier in Bull. Soc. Bot. France, xxvii. p. 292.

Nicaragua, Omotepe (*Lévy*).

15. **Paspalum fasciculatum,** Willd. in Flügge, Monogr. p. 69; H. B. K. Nov. Gen. et Sp. i. p. 89; Fournier, Mex. Pl. Enum., Gram. p. 8.

South Mexico, Vera Cruz (*Gouin*); Panama, Empire Station (*S. Hayes*, 265).—Southward to Peru and Brazil. Hb. Kew.

16. **Paspalum fastigiatum,** Nees, Agrostol. Bras. p. 33; Kunth, Enum. Pl. i. p. 42; Fournier, Mex. Pl. Enum., Gram. p. 7.

Panicum pilosum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 13), non Swartz.

South Mexico, Mirador and Zacuapan, Vera Cruz (*Galeotti*, 5682, 5727), Mirador (*Liebmann*), Orizaba (*Schaffner*).—Brazil. Hb. Kew.

17. **Paspalum filiforme,** Flügge, Monogr. p. 139; Kunth, Enum. Pl. i. p. 46, excl. syn.; Walt. et Poir. ex Fournier, Mex. Pl. Enum., Gram. p. 7.

Panicum filiforme, Linn. Sp. Pl. ed. 1, p. 57; Chapman, Fl. Southern U. S. p. 572.

Digitaria filiformis, Mühlenb.; Griseb. Fl. Brit. W. Ind. p. 543.

Carolina to Georgia.—South Mexico, Orizaba (*Botteri; Schaffner; Bourgeau*), Dos Puentes and Totutla (*Liebmann*), near Tacubaya (*Schaffner*).—West Indies; Brazil. Hb. Kew.

18. **Paspalum fluitans,** Kunth, Gram. i. p. 24, et Enum. Pl. i. p. 41; Fournier, Mex. Pl. Enum., Gram. p. 5; Chapman, Fl. Southern U.S. p. 570.

Ceresia fluitans, Ell. Sketch Bot. i. p. 109.

Carolina southward.—South Mexico, Vera Cruz (*Gouin*).—Also in British Guiana, according to Fournier.

[*Paspalum fuscum,* Presl, Reliq. Hænk. i. p. 214, is of doubtful origin, possibly Mexican.]

19. **Paspalum gracile,** Rudge, Pl. Guian. p. 20, t. 26; Fournier, Mex. Pl. Enum., Gram. p. 5.

South Mexico, Orizaba (*Botteri*, 1269).—Guiana.

20. **Paspalum hartwegianum,** Fournier, Mex. Pl. Enum., Gram. p. 12.

Paspalum lentiferum, Munro in Benth. Pl. Hartw. p. 346.

South Mexico, ditches, Leon (*Hartweg*, 245). Hb. Kew.

21. **Paspalum humboldtianum,** Flügge, Monogr. p. 67; H. B. K. Nov. Gen. et Sp. i. p. 86, t. 23; Ch. et Schl. in Linnæa, vi. p. 31; Kunth, Enum. Pl. i. p. 42; S. Wats. in Proc. Am. Acad. xviii. p. 172.

Paspalum ciliatum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 12), non H. B. K.

North Mexico, San Luis Potosi (*Schaffner*); South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), Mirador (*Liebmann*, 118), region of Orizaba (*Bourgeau*, 2641; *Müller*, 2038), without locality (*Bates*), Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 5683).—Widely dispersed in Tropical America. Hb. Kew.

22. **Paspalum karwinskii,** Fournier, Mex. Pl. Enum., Gram. p. 8.

South Mexico, Savana Grande, between El Chapopote and Tamalor (*Karwinski*).

23. **Paspalum lentiginosum,** Presl, Reliq. Hænk. i. p. 218; Fournier, Mex. Pl. Enum., Gram. p. 9.

Paspalum virgatum, Ch. et Schl. in Linnæa, vi. p. 32; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 12), non Linn. nec Griseb., fide Fournieri.

Texas.—South Mexico, near Jalapa (*Schiede & Deppe*), Orizaba (*Schaffner*, 107; *Botteri*, 1266; *Müller*, 2054), eastern Cordillera near El Enceno (*Galeotti*, 5714), Cuernavaca (*Bourgeau*, 1297), Mirador and Pital (*Liebmann*, 122, 137), San Juan del Rio near Orizaba (*Bourgeau*, 2975); Panama, Rio Grande swamp and Paraiso (*S. Hayes*, 141, 233).—Colombia to Peru and Brazil, and in the West Indies. Hb. Kew.

24. **Paspalum liebmannii,** Fournier, Mex. Pl. Enum., Gram. p. 11.

South Mexico, Paso de Ovejo (*Liebmann*, 189).

25. **Paspalum lineare,** Fournier, Mex. Pl. Gram. p. 12.

South Mexico, Chinantla, Puebla, and elsewhere (*Liebmann*, 187, 192).

26. **Paspalum lividum,** Trin. ex Schl. in Linnæa, xxvi. p. 383; Fournier, Mex. Pl. Enum., Gram. p. 12.

South Mexico, Vera Cruz to Orizaba (*Müller*, 2061; *Bourgeau*, 121; *Schaffner*, 113; *Botteri*), San Juan del Rio (*Bourgeau*, 2544), near Mextitlan (*Galeotti*, 5823), Hacienda de la Laguna (*Schiede & Deppe*); Guatemala, Dueñas (*Godman & Salvin*).—Southward to Peru and Brazil. Hb. Kew.

27. **Paspalum macrophyllum,** H. B. K. Nov. Gen. et Sp. i. p. 92; β. *piliferum*, Fournier, Mex. Pl. Enum., Gram. p. 11.

South Mexico, Orizaba (*Botteri*, 117), Consoquitla and Santa Maria Tlatella (*Liebmann*, 117, 168).

Typical *P. macrophyllum* is a native of Colombia.

28. **Paspalum mandioccanum,** Trin. ex Nees, Agrostol. Bras. p. 68; Trin. Sp. Gram. Ic. et Descr. t. 154; Kunth, Enum. Pl. i. p. 62.

Panama, without locality (*Jameson*).—Brazil; Trinidad? Hb. Kew.

29. **Paspalum minus,** Fournier, Mex. Pl. Enum., Gram. p. 6.

South Mexico, valley of Cordova (*Bourgeau*, 2298), Paso del Correo (*Liebmann*, 154). Hb. Kew.

30. **Paspalum mononeuron,** Steud. Gram. p. 24; Fournier, Mex. Pl. Enum., Gram. p. 13.

South Mexico, Oaxaca (ex *Steudel*).

Fournier suggests that this may be a synonym of *P. lividum*.

31. **Paspalum notatum,** Flügge, Monogr. p. 106; Ch. et Schl. in Linnæa, vi. p. 31, partim; Kunth, Enum. Pl. i. p. 51; Fournier, Mex. Pl. Enum., Gram. p. 6.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Santa Fe near Jalapa (*Schiede & Deppe*), region of Orizaba (*Bourgeau*, 2603, 2749; *Müller*, 2060), Mecapalco (*Liebmann*, 156), Vera Cruz (*Gouin*); Nicaragua, Greytown (*Tate*, 68); Panama (*Wagner*).—Colombia to Brazil, and in the West Indies. Hb. Kew.

32. **Paspalum obtusifolium,** Raddi, Agrostogr. Bras. p. 23; Schl. in Linnæa, xxi. p. 383; Trin. Sp. Gram. Ic. et Descr. i. t. 115; Chapman, Fl. Southern U. S. Suppl. p. 665; Fournier, Mex. Pl. Enum., Gram. p. 7.

Paspalum furcatum, Ch. et Schl. in Linnæa, vi. p. 32; Kunth, Enum. Pl. i. p. 53, quoad locum Mexicanum, non Flügge, fide Fournieri.

Florida; Georgia.—South Mexico, Los Cocos (*Schiede & Deppe*), Vera Cruz (*Gouin*). —Brazil.

33. **Paspalum paniculatum,** Linn. Sp. Pl. ed. 2, p. 81; Kunth, Enum. Pl. i. p. 59; Trin. Sp. Gram. Ic. et Descr. ii. t. 127; Fournier, Mex. Pl. Enum., Gram. p. 9 (varietates); Griseb. Fl. Brit. Ind. p. 543; Seem. Bot. Voy. 'Herald,' p. 223.

Paspalum supinum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 11).

South Mexico, region of Orizaba (*Bourgeau*, 2642; *Botteri*, 1201), Jalapa (*Coulter*, 1643), Jalapa and Mirador (*Galeotti*, 5727), Pinotepe, Oaxaca (*Galeotti*, 5872), Mirador and Pital (*Liebmann*, 163, 165); Guatemala, Mazatenango (*Bernoulli*, 538); Nicaragua, Realejo (*Sinclair*); Panama, Empire station (*S. Hayes*, 231), Isla de Taboga (*Seemann*, 1559).—Colombia to Peru, Guiana and Brazil, and in the West Indies; also in the Galapagos, Tropical Africa, and the Mascarene Islands. Hb. Kew.

34. **Paspalum paupercullum,** Fournier, Mex. Pl. Enum., Gram. p. 10 (varietates).
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Rio Blanco near Orizaba (*Bourgeau*, 2033). Hb. Kew.

35. **Paspalum planifolium,** Fournier, Mex. Pl. Enum., Gram. p. 10.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Müller*, 2062).

36. **Paspalum plicatulum,** Michx. Fl. Bor.-Am. i. p. 45; Ch. et Schl. in Linnæa, vi. p. 32; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 11); Fournier, Mex. Pl. Enum., Gram. p. 10; Griseb. Fl. Brit. W. Ind. p. 542.
Paspalum undulatum, Poir. in Lam. Encycl. v. p. 29; Chapman, Fl. Southern U. S. p. 571.
Paspalum antillense, Husnot, Enum. Glum. p. 13.
North Carolina to Florida and Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, region of Orizaba (*Bourgeau*, 2598, 2633, 2843, 2974; *Botteri*, 113, 119; *Schaffner*, 202, 203; *Müller*, 2055), Puente Nacional, Vera Cruz (*Linden*, 69), Cordova (*Schaffner*), Jalapa and Mirador (*Liebmann*, 182; *Galeotti*, 5729; *Schiede & Deppe*).—Colombia to Brazil, and in the West Indies. Hb. Kew.

37. **Paspalum pubiflorum,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 11, nomen tantum); Fournier, Mex. Pl. Enum., Gram. p. 11.
South Mexico, Tehuacan de las Granadas 5500 feet (*Galeotti*, 5747). Hb. Kew.

β. **viride,** Fournier, Mex. Pl. Enum., Gram. p. 11.
North Mexico, San Luis Potosi (*Virlet d'Aoust*).

38. **Paspalum pumilum,** Nees, Agrostol. Bras. p. 52; Kunth, Enum. Pl. i. p. 51; Fournier, Mex. Pl. Enum., Gram. p. 7.
South Mexico, Potrero de Cazadero, San Sebastian (*Liebmann*, 195).—Brazil.

39. **Paspalum pusillum,** Vent. in Flügge Monogr. p. 100; Kunth, Enum. Pl. i. p. 51; Griseb. Fl. Brit. W. Ind. p. 541; Fournier, Mex. Pl. Enum., Gram. p. 8; Trin. Sp. Gram. Ic. et Descr. iii. t. 273.
Paspalum orbiculatum, Poir. in Lam. Encycl. v. p. 32.
South Mexico, Hacienda de Santa Barbara, Paso de Doña Juana and Colipa (*Liebmann*, 152, 153; *Karwinski*, 987); Panama, Chagres (*Fendler*, 376).—Colombia to Ecuador, Guiana, Brazil, and in the West Indies. Hb. Kew.

40. **Paspalum pyramidale,** Nees, Agrostol. Bras. p. 77; Kunth, Enum. Pl. i. p. 43.

NICARAGUA (*Tate*, 56).—COLOMBIA to ECUADOR, GUIANA, and PARAGUAY. Hb. Kew.

41. **Paspalum rudimentosum,** Steud. Gram. p. 24; Fourn. Mex. Pl. Enum., Gram. p. 8.

SOUTH MEXICO, Chinantla (*Liebmann*, 199 et 200), Oaxaca (ex *Steudel*).

42. **Paspalum saccharoides,** Nees; Steud. Gram. p. 23; Döll in Mart. Fl. Bras. ii. 2, p. 92.

Panicum saccharoides, Kunth, Gram. i. p. 237, t. 30, et Enum. Pl. i. p. 125.
Tricholæna saccharoides, Griseb. Fl. Brit. W. Ind. p. 557.
Saccharum polystachyum, Swartz, Prodr. p. 21, et Fl. Ind. Occ. i. p. 127.

PANAMA, summit of railroad track (*S. Hayes*, 219).—VENEZUELA; WEST INDIES. Hb. Kew.

43. **Paspalum schaffneri,** Griseb. ex Fourn. Mex. Pl. Enum., Gram. p. 6.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Chapultepec, San Angel, Guadalupe, and Mirador (*Schaffner*), Vera Cruz (*Gouin*), without locality (*Liebmann*), near Mexico (*Bourgeau*, 532), Orizaba (*Müller*, 2039, in part). Hb. Kew.

[*Paspalum senescens*, Trin. ex Schl. in Linnæa, xxvi. p. 383, is a doubtful species.]

44. **Paspalum squamulatum,** Fourn. Mex. Pl. Enum., Gram. p. 11.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Chinantla (*Liebmann*, 198), Orizaba (*Bourgeau*, 2640; *Botteri*, 115). Hb. Kew.

45. **Paspalum stellatum,** Flügge, Monogr. p. 65; Kunth, Enum. Pl. i. p. 41; Seem. Bot. Voy. 'Herald,' p. 223 (β. *monostachyum*).

PANAMA, near Anton (*Seemann*, 129).—COLOMBIA to BRAZIL. Hb. Kew.

46. **Paspalum sumichrastii,** Fourn. Mex. Pl. Enum., Gram. p. 11.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Orizaba (*Botteri*, 115; *Bourgeau*, without number).

47. **Paspalum tenellum,** Willd. Enum. Pl. Hort. Berol. i. p. 89; Fourn. Mex. Pl. Enum., Gram. p. 12.

Paspalum elegans, Flügge, Monogr. p. 183, non Jacq. Ecl. t. 23.
Paspalum affine, Steud. Gram. p. 24?

SOUTH MEXICO, Oaxaca (ex *Steudel*), Pedregal (*Bourgeau*, 681). Hb. Kew.

β. **bourgæi,** Fourn. Mex. Pl. Enum., Gram. p. 12.

SOUTH MEXICO, Tizapan, valley of Mexico (*Bourgeau*, 1150), Mirador, Vera Cruz, and valley of Mexico (*Schaffner*, 524). Hb. Kew.

48. **Paspalum triglume,** Steud. Gram. p. 27.

SOUTH MEXICO, Oaxaca (ex *Steudel*).

49. **Paspalum velutinum,** Kunth, Gram. i. p. 27 ?, ex Fourn. Mex. Pl. Enum., Gram. p. 8.

South Mexico, in pastures near San Nicolas, in the valley of Mexico (*Bourgeau*, 1033, in part.), Orizaba (*Schaffner*).

50. **Paspalum virletii,** Fourn. Mex. Pl. Enum., Gram. p. 12.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

[*Anachyris setosa*, Fourn. Mex. Pl. Enum., Gram. p. 2, is a species of *Paspalum*, as the genus is defined by Bentham, and it is probably among those enumerated above.]

2. ANTHÆNANTIA.

Anthænantia, Beauv. Agrostogr. p. 48, t. 10. fig. 7; Benth. et Hook. Gen. Plant. iii. p. 1098.

Species three, whereof two inhabit the south-eastern States of North America, and the range of the third follows.

1. **Anthænantia lanata,** Benth. in Journ. Linn. Soc. xix. p. 39.

Paspalum lanatum, H. B. K. Nov. Gen. et Sp. i. p. 94, t. 29.
Milium lanatum, Rœm. et Schult. Syst. Veg. ii. p. 322; Kunth, Revis. Gram. ii. t. 163, et Enum. Pl. i. p. 66; Griseb. Fl. Brit. W. Ind. p. 534.
Leptocoryphium lanatum, Nees, Agrostol. Bras. p. 84; Döll in Mart. Fl. Bras. ii. 2, p. 120, t. 17 (varietates); Fourn. Mex. Pl. Enum., Gram. p. 13.
Leptocoryphium molle, Nees, loc. cit. p. 85.

South Mexico, Mirador (*Liebmann*), near Venta del Camaron and Alto del Peregrino at 1200 feet (*Humboldt & Bonpland*).—Venezuela to Peru, Guiana, and Uruguay, and in Trinidad and Cuba. Hb. Kew.

3. ERIOCHLOA.

Eriochloa, H. B. K. Nov. Gen. et Sp. i. p. 94, tt. 30 et 31; Benth. et Hook. Gen. Plant. iii. p. 1099.
Œdipachne, Link, Hort. Berol. i. p. 51.
Helopus, Trin. Fund. Agrostogr. p. 103.

Bentham (in Journ. Linn. Soc. xix. p. 39, and in Gen. Plant. iii. p. 1099) says:—"Nearly twenty species have been published, of which five appear to be quite distinct; two out of these (*E. distachya*, H. B. K., and *E. grandiflora*, Trin.) are endemic in America, the third (*E. trichopus*, Hochst.) in Africa, the fourth (*E. villosa*, Kunth) in Eastern Asia; all the rest (*E. punctata*, *E. annulata*, &c.) are reducible to varieties of *E. polystachya*, H. B. K., a species that is very widely dispersed in tropical and subtropical regions of both hemispheres."

1. **Eriochloa polystachya,** H. B. K. Nov. Gen. et Sp. i. p. 95, t. 31; Kunth, Enum. Pl. i. p. 72; Benth. in Journ. Linn. Soc. xix. p. 39, et in Benth. et Hook. Gen. Pl. iii. p. 1099 (varietates).

Eriochloa punctata, Desv. ex Hamilt. Prodr. Pl. Ind. Occ. p. 5; Kunth, Enum. Pl. i. p. 72; Griseb. Fl. Brit. W. Ind. p. 514.
Helopus punctatus, Nees, Agrostol. Bras. p. 16; Fourn. Mex. Pl. Enum., Gram. p. 13.

Eriochloa acuminata, Kunth, Enum. Pl. i. p. 72.
Piptatherum acuminatum, Presl, Reliq. Hænk. i. p. 221.
Helopus acuminatus, Fourn., et *H. gracilis*, Fourn. Mex. Pl. Enum., Gram. p. 13.

New Mexico; Texas; Arkansas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Trapiche de la Concepcion (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 2109; *Liebmann*, 436).—Southward to Uruguay, and widely dispersed in the warmer regions of the Old World. Hb. Kew.

We have followed Bentham in the circumscription of this species, of which, common as it is in some parts of America and the Old World, we have seen only one Mexican specimen, and none from Central America.

4. ISACHNE.

Isachne, R. Br. Prodr. Fl. Nov. Holl. p. 196; Benth. et Hook. Gen. Plant. iii. p. 1100.

This genus numbers about twenty species, spread nearly all over the warmer regions of both hemispheres; but the majority of the species are natives of the Old World. The Mexican and Central-American species are in such a state of confusion that we are unable to determine what names they should bear. Thus, Fournier (Mex. Pl. Enum., Gram. p. 35) distinguishes two Mexican species, which he refers to *I. dispersa*, Fourn. (*Panicum dispersum*, Lam.), and *I. ventricosa*, Döll (*Panicum salzmanni*, Trin.). Grisebach (Fl. Brit. W. Ind. p. 553) treats *Panicum dispersum*, Trin., *Isachne dubia*, Kunth, and *Isachne panicea*, Trin., as synonyms of his *Isachne arundinacea* (*Panicum arundinaceum*, Swartz). In the Kew Herbarium some of the specimens referred by Fournier to *Isachne ventricosa*, Döll, were first named *Isachne panicea*, Trin., by the late General Munro; but in a later memorandum he states that he had seen the true *Isachne panicea*, Trin., in Lindley's herbarium, named by Trinius himself, and found that it was quite distinct from the specimens which he, General Munro, had so named in the Kew Herbarium; and he proposed making a new species, and actually gave a manuscript name, which we forbear printing because of the uncertainty respecting the names the Mexican species should bear.

In the Kew Herbarium there are two species from Mexico. One is represented by a single specimen from the valley of Cordova (*Bourgeau*, 1458), which is referred, at least as to Bourgeau's number, to *I. disperma* by Fournier. This has hairy culms, and the leaves are scabrid beneath. The other is represented by specimens from Mirador (*Linden*, 71 and 283), Consoquitla (*Liebmann*, 143), Orizaba (*Müller*, 78; *Bilimek*, 450), and without a locality (*Harris*); and is the *I. ventricosa* of Fournier, but not of Döll, and the proposed new species of Munro.

Besides the two Mexican species, there are two others in the Kew herbarium from within our limits, namely, one from Panama (*Seemann*, 122; *Hayes*, 289), and one from Nicaragua (*Tate*, 453). The former is named *Isachne trachysperma*, Nees, by the author himself (Seem. Bot. Voy. 'Herald,' p. 224), and the same species is named *Isachne ventricosa*, Döll, by Bentham without the sign of doubt. The Nicaraguan

plant is very distinct from everything else in the genus at Kew, and is probably an undescribed species. Fournier (Sertum Nicaraguense, in Bull. Soc. Bot. France, xxvii. p. 293) enumerates only one species of *Isachne*, namely *I. disperma*.

5. PANICUM.

Panicum, Linn. Gen. Plant. n. 76; Benth. et Hook. Gen. Plant. iii. p. 1100.

One of the largest genera of grasses, comprising upwards of 250 species, which are generally diffused in tropical and subtropical regions, but rare in the temperate zones, especially the northern. The determinations of Munro, in the Kew Herbarium, and of Fournier in his 'Mexicanarum Plantarum Enumeratio,' do not always agree, and many of the forms regarded as distinct new species by the latter are referred to previously described species by the former, so that, although some of Fournier's new species are retained here for want of means of determining what they are, the plants may be actually included, in some instances, under other species.

1. **Panicum acuminatum,** Swartz, Prodr. Fl. Ind. Occ. p. 23; Griseb. Fl. Brit. W. Ind. p. 553 (var. *Panici dichotomi*); Ch. et Schl. in Linnæa, vi. p. 34; Fourn. Mex. Pl. Enum., Gram. p. 21.

Canada southward.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Jalapa (*Schiede & Deppe*), Mirador (*Schaffner*), Totutla, Hacienda de Jovo (*Liebmann*), Orizaba (*Botteri*).—West Indies. Hb. Kew.

We follow Fournier in keeping *P. nitidum*, Lam., distinct from *P. dichotomum*, Linn., which is the name generally adopted for the North-American forms of this species.

2. **Panicum ambitiosum,** Fourn. Mex. Pl. Enum., Gram. p. 30.

Milium sparsum, Mill. Dict. n. 2?

South Mexico, Orizaba (*Thomas*), Vera Cruz (herb. *Uzac*).

Only known from Fournier's description; it is placed next to *P. virgatum*, Linn.

3. **Panicum arundinariæ,** Trin. ex Fourn. Mex. Pl. Enum., Gram. p. 25.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Mirador (*Liebmann*), Orizaba (*Müller*), Cordova (*Schaffner*).

4. **Panicum ascendens,** H. B. K. Nov. Gen. et Sp. i. p. 97; Kunth, Enum. Pl. i. p. 83; Fourn. Mex. Pl. Enum., Gram. p. 17.

Panicum villiferum, Nees in Linnæa, xix. p. 687? ex Fourn.

South Mexico, between Zelayo and Queretaro (*Humboldt & Bonpland*), without locality (*Liebmann*).—Colombia to Peru, and in Cuba.

5. **Panicum aturense,** H. B. K. Nov. Gen. et Sp. i. p. 103, t. 33; Kunth, Enum. Pl. i. p. 123; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 13); Fourn. Mex. Pl. Enum., Gram. p. 23.

Panicum blepharophorum, Presl, Reliq. Hænk. i. p. 312.

South Mexico, Chinantla, Oaxaca at 3000 feet (*Galeotti*, 5744), Trapiche de la Concepcion, between La Isleta and Maloapan, Hacienda de Jovo, Jicaltepec, between Huitamalco and Mecapalco, and Totutla (*Liebmann*).—Venezuela.

[*P. auritum*, Steud. Gram. p. 70, is recorded from Luzon and Mexico, probably owing to a mistake in labelling; which of the countries it is from we cannot say; but Munro notes in his copy of Steudel's 'Gramineæ,' now in the Kew Library, that he had seen a specimen of this species in De Candolle's herbarium from Ceylon.]

6. **Panicum avenaceum,** H. B. K. Nov. Gen. et Sp. i. p. 99; Kunth, Enum. Pl. i. p. 99; Fourn. Mex. Pl. Enum., Gram. p. 27.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, between Mexico and Tacubaya (*Bourgeau*, 235 bis), Borrego (*Bourgeau*, 2754), Chinantla (*Liebmann*), Chapultepec (*Schaffner*), Orizaba (*Botteri*, 160).

7. **Panicum brevifolium,** Linn. Sp. Pl. ed. i. p. 59; Fourn. Mex. Pl. Enum., Gram. p. 21.

Panicum trichoides, Swartz, Prodr. Fl. Ind. Occ. p. 24; H. B. K. Nov. Gen. et Sp. i. p. 105; Kunth, Enum. Pl. i. p. 112; Griseb. Fl. Brit. W. Ind. p. 552.

South Mexico, Guatulco, Oaxaca (*Liebmann*, 27 and 146), Acapulco (*Thiebaut*); Guatemala, Chojoja near Mazatenango (*Bernoulli*, 393); Nicaragua (*Lévy*, 37); Panama (*Seemann*).—Colombia to Peru and Brazil, and in the West Indies. Hb. Kew.

8. **Panicum bourgæi,** Fourn. Mex. Pl. Enum., Gram. p. 25.

South Mexico, Cordova (*Bourgeau*, 1662, in part.). Hb. Kew.

9. **Panicum buchingeri,** Fourn. Mex. Pl. Enum., Gram. p. 30.

South Mexico, Orizaba (*Thomas*).

10. **Panicum bulbosum,** H. B. K. Nov. Gen. et Sp. i. p. 99; Kunth, Enum. Pl. i. p. 99; Fourn. Mex. Pl. Enum., Gram. p. 27.

South Mexico, Vera Cruz to Orizaba (*Müller*, 2043), near Tacubaya (*Schaffner*, 676), Chinantla, Puebla (*Liebmann*, 75), Santa Rosa Los Joares and Guanajuato at 6000 to 7000 feet (*Humboldt & Bonpland*). Hb. Kew.

11. **Panicum cæspitosum,** Swartz, Fl. Ind. Occ. i. p. 146; Fourn. Mex. Pl. Enum., Gram. p. 18; Griseb. Fl. Brit. W. Ind. p. 446 (sub *P. prostrato*); S. Wats. in Proc. Am. Acad. xviii. p. 172.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 962; *Schaffner*, 1040; *Virlet d'Aoust*); South Mexico, Cerro de los Baños, Santa Fé, and San Angel (*Bourgeau*, 222, 439, 679), San Cristobal (*Schaffner*), valley of Oaxaca (*Liebmann*).—West Indies. Hb. Kew.

12. **Panicum carthaginense,** Swartz, Fl. Ind. Occ. i. p. 148; Griseb. Fl. Brit. W. Ind. p. 546; Fourn. Mex. Pl. Enum., Gram. p. 26.

Panicum fuscum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 13), non Swartz.

South Mexico, Mirador (*Galeotti,* 5709).—West Indies.

13. **Panicum chauvinii,** Steud. Gram. p. 68; Fourn. Mex. Pl. Enum., Gram. p. 32.

South Mexico, barranca near Cuernavaca (*Bourgeau,* 1300), without locality (*Karwinski*).—Guadaloupe.

Grisebach (Fl. Brit. W. Ind. p. 551) treats this as a variety of *P. divaricatum,* Linn.

14. **Panicum chloroticum,** Nees, Agrostol. Bras. p. 164; Steud. Gram. p. 73; Fourn. Mex. Pl., Gram. p. 29.

South Mexico, Tampico (herb. *Uzac*), Jicaltepec (*Liebmann*); Nicaragua (*Lévy,* 1018). —Brazil.

15. **Panicum clandestinum,** Linn. Sp. Pl. ed. 1, p. 58; A. Gr. Manual Bot. Northern U. S. ed. 5, p. 647; Fourn. Mex. Pl. Enum., Gram. p. 19 (varietas vaginis glabris).

Canada southward.—South Mexico, Cordova (*Schaffner*).

16. **Panicum commelinæfolium,** Rudge, Pl. Guian. p. 21, t. 28; Fourn. Mex. Pl. Enum., Gram. p. 20.

Carolina to Louisiana.—South Mexico, Jicaltepec, Mirador (*Liebmann*), Orizaba (*Botteri,* 1304), San Cristobal (*Bourgeau,* 3132).—Guiana; Brazil?

17. **Panicum compactum,** Swartz, Adnot. p. 14; Griseb. Fl. Brit. W. Ind. p. 552; Fourn. Mex. Pl., Gram. p. 34.

South Mexico, Vera Cruz (*Gouin*).—Jamaica.

18. **Panicum conchatum,** Fourn. Mex. Pl. Enum., Gram. p. 25.

South Mexico, Sierra de San Cristobal (*Schaffner*).

19. **Panicum cordovense,** Fourn. Mex. Pl. Enum., Gram. p. 26.

South Mexico, Cordova (*Schaffner*).

20. **Panicum cyanescens,** Nees, Agrostol. Bras. p. 220; Fourn. Mex. Pl. Enum., Gram. p. 20.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

21. **Panicum decolorans,** H. B. K. Nov. Gen. et Sp. i. p. 100; Kunth, Enum. Pl. i. p. 100; Fourn. Mex. Pl. Enum., Gram. p. 27.

South Mexico, near Queretaro at 6000 feet (*Humboldt & Bonpland*).

22. **Panicum diffusum,** Swartz, Fl. Ind. Occ. i. p. 160; Griseb. Fl. Brit. W. Ind. p. 548; Fourn. Mex. Pl. Enum., Gram. p. 29.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Bourgeau,*

2751; *Müller*, 2042), Vera Cruz (*Gouin*), Consoquitla (*Liebmann*).—West Indies; Brazil. Hb. Kew.

23. **Panicum disciferum,** Fourn. Mex. Pl. Enum., Gram. p. 19.
North Mexico, San Luis Potosi (*Virlet d'Aoust*).

24. **Panicum distichum,** Lam. Encycl. iv. p. 741; Steud. Gram. p. 55; Griseb. Fl. Brit. W. Ind. p. 548.

Mexico (ex *Grisebach*); Guatemala, Chojoja, near Mazatenango (*Bernoulli*, 89); Nicaragua, Chontales (*Tate*, 532).—Colombia to Brazil and in the West Indies. Hb. Kew.

25. **Panicum divaricatum,** Linn. in Elmgr. Pl. Jamaic. Pugil. n. 9; Kunth, Gram. i. t. 29; Ch. et Schl. in Linnæa, vi. p. 32; Steud. Gram. p. 69; Fourn. Mex. Pl. Enum., Gram. p. 32 (varietates plures).

South Florida.—Common throughout South Mexico and Central America; also in South America and the West Indies. Hb. Kew.

As circumscribed by Fournier this includes *P. latifolium*, Rupr. (Bull. Acad. Brux. ix., reprint, p. 14), and *P. glutinosum*, H. B. K. (Nov. Gen. et Sp. i. p. 100).

26. **Panicum elephantipes,** Nees, Agrostol. Bras. p. 165; Steud. Gram. p. 74?
Guatemala, Mazatenango (*Bernoulli*, 543). Hb. Kew.

27. **Panicum excelsum,** Nees, Agrostol. Bras. p. 180; Fourn. Mex. Pl., Gram. p. 30.

South Mexico, Vera Cruz (*Gouin*).—Brazil.

28. **Panicum expansum,** Fourn. Mex. Pl. Enum., Gram. p. 26.
South Mexico, Huitamalco (*Liebmann*).

29. **Panicum fasciculatum,** Swartz, Prodr. Fl. Ind. Occ. p. 22, et Fl. Ind. Occ. i. p. 145; H. B. K. Nov. Gen. et Sp. i. p. 98; Kunth, Enum. Pl. i. p. 94; Fourn. Mex. Pl. Enum., Gram. p. 26.
Panicum fuscum, β. fasciculatum, Griseb. Fl. Brit. W. Ind. p. 547.
Panicum fusco-rubens, Lam. Ill. i. p. 171.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Volcan de Jorullo at 2700 feet (*Humboldt & Bonpland*), Santa Maria Tlatella, Teotalcingo, and Hacienda de Santa Cruz near Tehuantepec (*Liebmann*), Vera Cruz (*Gouin*).—Tropical South America and the West Indies.

30 **Panicum fimbriatum,** Kunth, Gram. i. p. 133, et Enum. Pl. i. p. 81; Presl, Reliq. Hænk. i. p. 298.
Digitaria fimbriata, Link, Hort. Berol. i. p. 226.
South Mexico, Colipa (*Karwinski*); Nicaragua (*Lévy*).

Fournier treats this as an independent species, and *Digitaria setigera*, Roth, as a variety of it; but *P. fimbriatum* is referred to the common *P. sanguinale* by Munro.

31. **Panicum flabellatum,** Fourn. in. Bull. Soc. Bot. France, xxvii. p. 293.
NICARAGUA, Omotepe (*Lévy*, 1166).

32. **Panicum fuscum,** Swartz, Fl. Ind. Occ. i. p. 156; Steud. Gram. p. 67; Griseb. Fl. Brit. W. Ind. p. 546.
SOUTH MEXICO, Monteciños and Jalapa, Vera Cruz (*Linden*, 75 and 267), Puerto de Santa Cruz, Oaxaca (*Liebmann*, 43), without locality (*Harris*); GUATEMALA, Chojoja near Mazatenango (*Bernoulli*, 88); NICARAGUA, around Granada (*Lévy*, 136); PANAMA, Paraiso (*S. Hayes*, 221).—SOUTH AMERICA and WEST INDIES. Hb. Kew.
This is probably the species that Fournier calls *P. carthaginense*, Swartz, but it is not quite clear that he regarded *P. fuscum*, Swartz, as the same, because he cites it thus:—"*P. fuscum*, Swartz, Rupr. in Bull. Acad. Brux. in. n. 8," which may or may not be intended to limit it to Galeotti's specimen, which Ruprecht had under consideration. Galeotti's 5709, the plant in question, is not represented in the Kew Herbarium.

33. **Panicum francavillanum,** Fourn. Mex. Pl. Enum., Gram. p. 25.
SOUTH MEXICO, Tacubaya (*Schaffner*).

34. **Panicum ghiesbreghtii,** Fourn. Mex. Pl. Enum., Gram. p. 29.
NORTH MEXICO, San Luis Potosi (*Gouin*); SOUTH MEXICO, without locality (*Ghiesbreght*), between San Vicente and Corozal (*Karwinski*).

35. **Panicum glutinosum,** Swartz, Prodr. Fl. Ind. Occ. p. 24, non Lam. nec H. B. K.; Fourn. Mex. Pl. Enum., Gram. p. 23; Griseb. Fl. Brit. W. Ind. p. 552.
SOUTH MEXICO, Mirador and Chapultepec (*Liebmann*), San Cristobal and Borrego, Orizaba (*Bourgeau*, 2748, 3192), Orizaba (*Botteri*, 160; *Müller*, 2026; *Schaffner*). Hb. Kew.

36. **Panicum gouini,** Fourn. Mex. Pl. Enum., Gram. p. 28 (cum var. *pumilo*).
SOUTH MEXICO, Vera Cruz (*Gouin; Virlet d'Aoust*), Antigua (*Liebmann*).

37. **Panicum hænkeanum,** Presl, Reliq. Hænk. i. p. 304; Steud. Gram. p. 80; Kunth, Enum. Pl. i. p. 97.
MEXICO, without locality (*Hænke*).
A doubtful species, Presl's description being merely copied by all later authors.

38. **Panicum hians,** Ell. Bot. Carol. i. p. 118; Chapm. Fl. Southern U.S. p. 573; Fourn. Mex. Pl. Enum., Gram. p. 28.
NORTH CAROLINA to FLORIDA.—SOUTH MEXICO, Consoquitla (*Liebmann*), Orizaba (*Botteri*, 132), Real del Monte (*Galeotti*, 5833). Hb. Kew.
Döll (Mart. Fl. Bras. ii. 2, p. 240) reduces *Panicum milioides*, Nees, to *P. hians*, Ell.;

but Fournier does not include the former name, and Munro seems to have regarded it as a distinct species.

39. **Panicum hirticaulum,** Presl, Reliq. Hænk. i. p. 308; Steud. Gram. p. 81; Kunth, Enum. Pl. i. p. 101.

MEXICO, without locality (*Hænke*).

40. **Panicum ichnanthoides,** Fourn. Mex. Pl. Enum., Gram. p. 30.

SOUTH MEXICO, Orizaba (*Müller*, 2082).

41. **Panicum inæquale,** Fourn. Mex. Pl. Enum., Gram. p. 17.

Paspalus inæqualis, Link?, Schult, Mant. ii. p. 174; Trin. Diss. p. 78.

SOUTH MEXICO, Vera Cruz (*Gouin*).

42. **Panicum kegelii,** Steud. Gram. p. 65 ("an iterum forma Panici stoloniferi").

GUATEMALA (ex *Steudel*).

43. **Panicum kunthii,** Fourn. Mex. Pl. Enum., Gram. p. 29.

Panicum coloratum, Kunth, Enum. i. p. 104, et herb. an et Jacq. Misc. ii. p. 305, et Ic. Pl. Rar. i. t. 12?, non L. ex Fourn.

Panicum arenarium, Ch. et Schl. in Linnæa, vi. p. 35, non Brot.

SOUTH MEXICO, near Vera Cruz (*Schiede*), valley of Mexico (*Schaffner*), along the canal near Mericalcingo (*Bourgeau*, 529).

44. **Panicum langei,** Fourn. Mex. Pl. Enum., Gram. p. 23.

SOUTH MEXICO, Teotalcingo (*Liebmann*).

45. **Panicum laxum,** Swartz, Prodr. p. 23?; Fourn. Mex. Pl. Enum., Gram. p. 25; Griseb. Fl. Brit. W. Ind. p. 548.

Panicum polygonatum, Kunth, Gram. t. 209, an Schrad.? ex Fourn.

SOUTH MEXICO, Orizaba (*Botteri*, 1282), Mirador, Huatusco, and Trapiche de la Concepcion (*Liebmann*), Orizaba (*Bourgeau*, 1662 in part).—WEST INDIES to BRAZIL. Hb. Kew.

46. **Panicum leiophyllum,** Fourn. Mex. Pl. Enum., Gram. p. 20.

SOUTH MEXICO, in the valley of Cordova (*Bourgeau*).

47. **Panicum leptostachyum,** Presl, Reliq. Hænk. i. p. 311; Steud. Gram. p. 58; Kunth, Enum. Pl. i. p. 87.

Hymenachne leptostachya, Fourn. Mex. Pl. Enum., Gram. p. 36.

MEXICO, without locality (*Hænke*).

48. **Panicum leucophæum,** H. B. K. Nov. Gen. et Sp. i. p. 97; Kunth, Enum. Pl. i. p. 124; Trin. Sp. Gram. Ic. et Descr. t. 220; S. Wats. in Proc. Am. Acad. xviii. p. 172.

Tricholæna insularis, Griseb. Fl. Brit. W. Ind. p. 557; Fourn. Mex. Pl. Enum., Gram. p. 35.

Panicum saccharoides, Willd. non Kunth.

Panicum duchassaingii, Steud. Gram. p. 93.

Texas.—North Mexico, without locality (*Palmer*, 1341), near Morales, San Luis Potosi (*Schaffner*, 1064); South Mexico, Antigua, Vera Cruz (*Liebmann*), Cordova (*Bourgeau*, 2158); Nicaragua, around Granada (*Lévy*, 283): Panama, Paraiso (*S. Hayes*, 223).—South America and West Indies. Hb. Kew.

49. **Panicum liebmannianum,** Fourn. Mex. Pl. Enum., Gram. p. 33.

South Mexico, Consoquitla (*Liebmann*).

β. **depauperatum,** Fourn. l. c.

South Mexico, between Guatulco and San Miguel del Puerto (*Liebmann*).

50. **Panicum lindeni,** Fourn. Mex. Pl. Enum., Gram. p. 29.

South Mexico, Yucatan (*Linden*).

51. **Panicum linkianum,** Kunth, Gram. i. p. 33; Fourn. Mex. Pl. Enum., Gram. p. 17.

Digitaria marginata, Link, Hort. Berol. i. p. 102; Trin. Diss. ii. p. 78.
Panicum adscendens, Ch. et Schl. in Linnæa, vi. p. 32, non H. B. K.
Panicum sanguinale, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 12), non L. ex Fourn.

This grass, which is usually regarded as a form of the very widely diffused *P. sanguinale*, is common in tropical America, including Mexico and Central America. Respecting its claim to specific rank, Fournier says:—"Differt a *P. sanguinali*, Linn., non colore spicularum, qui variabilis, viridis aut violascens in utraque specie, nec inflorescentia, nam in speciminibus americanis rami tum verticillati, tum corymbosi, sed gluma superiore acuminata dimidiam spiculam superante, non æquante. Præterea palea et gluma superior non solum puberulæ, sed margine et apice lacero-villosæ, pilis marginalibus paleæ neutrius primum appressis, dein patulis. Interdum gluma superior quasi bifida videtur."

52. **Panicum maculatum,** Aubl. Pl. Guian. i. p. 51; Steud. Gram. p. 69; Fourn. Mex. Pl. Enum., Gram. p. 32 (varietates).

South Mexico, Mirador (*Liebmann*), Oaxaca (ex *Steudel*).—Guiana; Brazil.

53. **Panicum maximum,** Jacq. Ic. Rar. i. t. 13; Steud. Gram. p. 72; Griseb. Fl. Brit. W. Ind. p. 549; Döll in Mart. Fl. Bras. ii. 2, p. 202.

Panicum polygamum, Swartz, Prodr. Fl. Ind. Occ. p. 24; Fournier, Mex. Pl. Enum., Gram. p. 28.

Mexico (ex *Grisebach*).—West Indies to Brazil.

According to Grisebach, this was originally introduced into America from Tropical Africa.

54. **Panicum megiston,** Schult. Mant. ii. p. 248; Fourn. Mex. Pl. Enum., Gram. p. 32.

Panicum altissimum, Meyer, Prim. Fl. Esseq. p. 63; Griseb. Fl. Brit. W. Ind. p. 549.
Panicum latifolium, var. *altissimum,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 14).
Panicum elatius, Kunth, Gram. i. p. 38, et Enum. Pl. i. p. 121.

South Mexico, Mirador (*Liebmann*, 66; *Linden*, 72), Orizaba (*Bourgeau*, 1889 bis),

Huitamalco, Trapiche de la Concepcion and La Loja (*Liebmann*), Cordillera of Vera Cruz 3000 feet (*Galeotti*, 5717), without locality (*Beechey*); GUATEMALA, Mazatenango (*Bernoulli*, 1189).—GUIANA; BRAZIL. Hb. Kew.

55. **Panicum microspermum,** Fourn. Mex. Pl. Enum., Gram. p. 22.

Panicum trichoides, Ch. et Schl. in Linnæa, vi. p. 33; et H. B. K. partim.

Panicum tricanthum, Nees, Agrostol. Bras. p. 210; Presl, Reliq. Hænk. i. p. 309; Griseb. Fl. Brit. W. Ind. p. 552.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 2172), near Jicaltepec (*Liebmann*, 136). PANAMA, Empire Station (*S. Hayes*, 244).—COLOMBIA to BRAZIL; WEST INDIES. Hb. Kew.

56. **Panicum molle,** Swartz, Fl. Ind. Occ. i. p. 143; Kunth, Enum. Pl. i. p. 92; Griseb. Fl. Brit. W. Ind. p. 547; Döll in Mart. Fl. Bras. ii. 2, p. 187.

Panicum barbinode, Trin. Sp. Gram. Ic. et Descr. t. 318.

PANAMA, Empire Station (*S. Hayes*, 230).—WEST INDIES; SOUTH AMERICA; TROPICAL AFRICA and ASIA. Hb. Kew.

57. **Panicum myosurus,** Rich. Act. Hist. Nat. Par. i. p. 106, e descript. sec. Fourn.

Hymenachne myosurus, Nees, Agrostol. Bras. p. 276; Fourn. Mex. Pl. Enum., Gram. p. 36.

SOUTH MEXICO, valley of Orizaba (*Schaffner*).—GUIANA; BRAZIL.

58. **Panicum myurum,** Meyer, Prim. El. Esseq. p. 50; Presl, Reliq. Hænk. i. p. 313; Kunth, Enum. Pl. i. p. 86, et Suppl. p. 65.

Hymenachne myuros, Beauv. Agrostogr. t. 10. fig. 8; Nees, Agrostol. Bras. p. 275; Fourn. Mex. Pl. Enum., Gram. p. 36.

SOUTH MEXICO, without locality (*Hænke*), Volcan de Jorullo (*Humboldt & Bonpland*); NICARAGUA (ex *Fournier*).—PERU; GUIANA; BRAZIL.

Hymenachne Gouini, Fourn., and *H. patula*, Fourn. loc. cit., placed next to this species, we have not seen.

59. **Panicum nervosum,** Lam. Encycl. iv. p. 747; Kunth, Enum. Pl. i. p. 113, et Gram. i. p. 227, t. 25; Döll in Mart. Fl. Bras. ii. 2, p. 264; Fourn. Mex. Pl. Enum., Gram. p. 23.

SOUTH MEXICO, Papantla and Cordova (*Karwinski*, 947), Colipa, Mirador, and Pital (*Liebmann*).—GUIANA; BRAZIL.

This species is included entirely on the authority of Fournier.

60. **Panicum neuranthum,** Griseb. Cat. Pl. Cub. p. 232.

"*Panicum striatum,* Muhl. non Lam.," Fourn. Mex. Pl. Enum., Gram. p. 19.

SOUTH MEXICO, Mirador and Cordova (*Schaffner*), Mirador (*Liebmann*).

Fournier also records this from "Jacksonville, Carolina, Drummond," but the specimen was probably from Alabama.

61. **Panicum nitidum,** Lam. Encycl. iv. p. 21; Döll in Mart. Fl. Bras. ii. 2, p. 246; Fourn. Mex. Pl. Enum., Gram. p. 21.

Panicum acuminatum, var. *β,* Ch. et Schl. in Linnæa, vi. p. 34, fide Fourn.

South Mexico, near Jalapa (*Schiede & Deppe*), Mirador (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 2045; *Bourgeau*, 2383).—Brazil. Hb. Kew.

As defined by Döll., this species is found in the South-eastern States of North America, and includes the *Panicum viscidum*, Elliott.

62. **Panicum oaxacense,** Steud. Gram. p. 73; Fourn. Mex. Pl. Enum., Gram. p. 31.

South Mexico, Oaxaca (ex *Steudel*), Orizaba (*Botteri*, 500; *Müller*, 2027), Colipa (*Karwinski*), Pital near the Rio Nantla (*Liebmann*, 285).

We have seen no specimens which we could refer with certainty to this species, but there is a specimen in the Kew Herbarium (*Liebmann*, 123) from the locality cited by Fournier, which agrees fairly well with Steudel's description as far as it goes. The sets of Liebmann's plants in different herbaria appear to be all differently numbered.

63. **Panicum obtectum,** Presl, Reliq. Hænk. i. p. 301; Steud. Gram. p. 58.

Tricholæna obtecta, Fourn. Mex. Pl. Enum., Gram. p. 35.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); Mexico, without locality (*Hænke*).—Martinique.

64. **Panicum obtusum,** H. B. K. Nov. Gen. et Sp. i. p. 98; Kunth, Revis. Gram. t. 116; Fourn. Mex. Pl. Enum., Gram. p. 27; S. Wats. in Proc. Am. Acad. xviii. p. 172.

North Mexico, San Luis Potosi (*Schaffner*, 1039; *Parry & Palmer*, 960); South Mexico, Aguas Calientes (*Hartweg*, 244), near Guanajuato and Burras 6000 to 7000 feet (*Humboldt & Bonpland*), Zacatecas (*Coulter*, 1633). Hb. Kew.

65. **Panicum paspalodes,** Pers. Syn. Pl. i. p. 81; Fourn. Mex. Pl. Enum., Gram. p. 18; Griseb. Fl. Brit. W. Ind. p. 545.

Panicum brizoides, Lam. Ill. i. p. 170; Presl, Reliq. Hænk. i. p. 30, fide Fourn.

South Mexico, Hacienda de Jovo, Paso de Doña Juana and San Augustin (*Liebmann*), Vera Cruz (*Gouin*), without locality (*Hænke*); Nicaragua (*Lévy*, 123).—West Indies and South America, and widely diffused in the Tropics of the Old World. Hb. Kew.

Döll reduces *P. paspalodes*, Pers., to *P. appressum*, Lam.

66. **Panicum patentissimum,** Desv. in Poir. Encycl. Suppl. iv. p. 283?; Fourn. Mex. Pl. Enum., Gram. p. 24; Steud. Gram. p. 832.

South Mexico, San Christobal, Orizaba (*Bourgeau*, 3197). Hb. Kew.

Fournier doubtingly refers Bourgeau's plant to this species, which is recorded by Desvaux from San Domingo and New Spain, and by Steudel from Mexico.

67. **Panicum phleiforme,** Presl, Reliq. Hænk. i. p. 302; Steud. Gram. p. 58.

Hymenachne phleiformis, Fourn. Mex. Pl. Enum., Gram. p. 36.

MEXICO, without locality (*Hænke*).

68. **Panicum pilosum,** Swartz, Prodr. Fl. Ind. Occ. p. 22; Presl, Reliq. Hænk. i. p. 300; Fourn. Mex. Pl. Enum., Gram. p. 24; Döll in Mart. Fl. Bras. ii. 2, p. 210 (varietates plures).

Panicum tenuiculmum, Mey. Prim. Fl. Essequeb. p. 58; Trin. Sp. Gram. Ic. et Descr. t. 215; Nees in Seem. Bot. Voy. 'Herald,' p. 223.

SOUTH MEXICO, Tacubaya (*Schaffner*), Mirador (*Liebmann*; *Galeotti*, 5728), Orizaba (*Botteri*; *Bourgeau*, 2602; *Müller*, 2095; *Schaffner*); NICARAGUA, Greytown (*Tate*, 232); PANAMA, Empire Station (*S. Hayes*, 226, 227), without locality (*Seemann*).—WEST INDIES and SOUTH AMERICA. Hb. Kew.

Grisebach (Fl. Brit. W. Ind. p. 548) reduces this to *P. distichum*, Lam.

69. **Panicum plantagineum,** Link, Hort. Berol. i. p. 206; Döll in Mart. Fl. Bras. ii. 2, p. 186; Fourn. Mex. Pl. Enum., Gram. p. 18.

Panicum leandri, Trin. Sp. Gram. Ic. et Descr. t. 335.

Panicum distans, Salzm. in Steud. Gram. p. 61.

SOUTH MEXICO, Orizaba (*Botteri*, 116), without locality (*Schiede*; *Bourgeau*; *Hahn*).—BRAZIL.

70. **Panicum polygonoides,** Lam. Encycl. iv. p 742; Presl, Reliq. Hænk. i. p. 308; Kunth, Enum. Pl. i. p. 115; Fourn. Mex. Pl. Enum., Gram. p. 20.

Isachne polygonoides, Döll in Mart. Fl. Bras. ii. 2, p. 273.

MEXICO (*Hænke*, ex Presl).—BRAZIL; GUIANA.

[*Panicum pregnans*, Steud. Gram. p. 74, is, according to a note by the late General Munro in his copy of the work cited, true *P. divaricatum*.]

71. **Panicum prorepens,** Steud. Gram. p. 46.

Oplismenus repens, Presl, Reliq. Hænk. i. p. 321.

MEXICO (ex *Presl*).

This is most likely *Oplismenus colonus*, H. B. K., for the author says: "Maxime affinis *O. colono*, differt vero radice repente etc."

72. **Panicum pulchellum,** Raddi, Agrostogr. Bras. p. 42; Döll in Mart. Fl. Bras. ii. 2, p. 190; Fourn. Mex. Pl. Enum., Gram. p. 24; Trin. Sp. Gram. Ic. et Descr. t. 178.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1455).—BRAZIL. Hb. Kew.

73. **Panicum rectum,** Rœm. et Schult. Syst. Veg. ii. p. 457; Hook. Fl. Bor.-Am. ii. p. 235; Fourn. Mex. Pl. Enum., Gram. p. 27.

CANADA southward.—SOUTH MEXICO, Castresana, Oaxaca (*Liebmann*).

74. **Panicum reflexopilum,** Steud. Gram. p. 84.

SOUTH MEXICO, Oaxaca (ex *Steudel*).

75. **Panicum repens,** Linn. Sp. Pl. ed. 2, p. 87; Kunth, Enum. Pl. i. p. 103; S. Wats. in Proc. Am. Acad. xviii. p. 172; Vasey, Grasses U. S. p. 12.

Panicum arenarium, Brot. Fl. Lusit. i. p. 82; Ch. et Schl. in Linnæa, vi. p. 35.

Alabama.—North Mexico, San Miguelito mountains, San Luis Potosi (*Schaffner*, 1040); South Mexico, Vera Cruz (*Schiede & Deppe*).—South Europe; North Africa; Canary Islands. Hb. Kew.

Schlechtendal was the first to refer Mexican specimens to this Old World species, and he says, *loc. cit.*, "Certo certius nostra una eademque planta ac europæa mediterranea, forsan nullo jure a *P. repente*, Linn., distracta et cum aliis a recentioribus speciebus ad eam reducenda." Chapman (Fl. Southern U. S. Suppl. p. 666) records it from the "Sandy Coast of Mobile," without further remark; but Vasey, who cites the same locality, treats it as a naturalized plant, which it might well be both there and at Vera Cruz, and it may have been conveyed by birds to the mountains of San Miguelito.

76. **Panicum rhizophorum,** Fourn. Mex. Pl. Enum., Gram. p. 31.

South Mexico, region of Orizaba (*Bourgeau*, 3025). Hb. Kew.

77. **Panicum rugulosum,** Trin. Diss. Alt. p. 195, et Sp. Gram. Ic. et Descr. t. 238; Döll in Mart. Fl. Bras. ii. 2, p. 258; Fourn. Mex. Pl. Enum., Gram. p. 21.

Panicum hirsutum, Lam. Encycl. iv. p. 741.

Panicum sillowi, var. β. *longevaginatum,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 13).

Panicum pilosum, var. β. *leiogonum,* Rupr. l. c. fide Fourn.

South Mexico, Jalapa (*Galeotti*, 5728, 5726, 5699), Orizaba (*Botteri*, 152).—Cuba; Guiana; Brazil. Hb. Kew.

78. **Panicum ruprechtii,** Fourn. Mex. Pl. Enum., Gram. p. 21.

Panicum rariflorum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 14), non Lam.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Las Vigas, near Jalapa, 7000 feet (*Galeotti*, 5733).

79. **Panicum ruscifolium,** H. B. K. Nov. Gen. et Sp. i. p. 101; Schl. et Ch. in Linnæa, vi. p. 33; Kunth, Enum. Pl. i. p. 121; Fourn. Mex. Pl. Enum., Gram. p. 34 (varietates 2).

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Cuernavaca (*Bilimek*), Volcan de Jorullo, 3000 feet (*Humboldt & Bonpland*), Zimapan (*Coulter*, 1639), without locality (*Parkinson*); Nicaragua (*Lévy*). Hb. Kew.

Under this species Fournier has the following observation:—"Haud raro observatur, in Panicis Americanis, singularis quædam spiculæ abnormitas, quæ tunc triflora evadit, flore ultimo 1-2-paleato, hyalino, spiculam superante. In hoc statu monstroso nititur genus *Agrostomia* (La Naturaleza, Nov. 1870)."*

* In the volume of 'La Naturaleza' referred to, pp. 343 to 351, Vicente Cervantes describes a number of grasses from the environs of Mexico as new, and belonging to new genera, but in such a manner as to be quite unrecognizable. Thus:—*Agrostomia*, three species; *Trichodiclidia*, two species; *Erucaria*, eight species; and *Echinanthus*, one species. They are probably all well known under other names.

80. **Panicum sanguinale,** Linn. Sp. Pl. ed. i. p. 57; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 12); Döll in Mart. Fl. Bras. ii. 2, p. 131; Trin. Sp. Gram. Ic. et Descr. tt. 93 et 144.

Digitaria sanguinalis, Scop. Fl. Carniol. n. 72.

South Mexico, Mirador, 3000 feet (*Galeotti*, 5716), Vera Cruz to Orizaba (*Müller*, 2162); Nicaragua, Greytown (*Tate*, 12); Panama, Chagres (*Fendler*, 364, 378), Empire Station (*S. Hayes*, 240).—Generally dispersed in Warm Countries. Hb. Kew.

81. **Panicum scaberrimum,** Lag. Elench. p. 2; Kunth, Enum. Pl. i. p. 105?; non Link, fide Fourn. Mex. Pl. Enum., Gram. p. 27.

South Mexico, Orizaba (*Bourgeau*).

82. **Panicum schlechtendalii,** Fourn. Mex. Pl. Enum., Gram. p. 30.

Panicum pallens, Ch. et Schl. in Linnæa, vi. p. 35, non Swartz.

Panicum pallens, var *angustifolium,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 15).

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Mirador (*Galeotti*, 5708; *Schaffner*), Jalapa (*Schiede & Deppe*), Orizaba (*Bourgeau*).

83. **Panicum sciaphilum,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 14); Fourn. Mex. Pl. Enum., Gram. p. 19.

South Mexico, Sierra de Yavezia (*Galeotti*, 5759).

84. **Panicum scoparium,** Rudge, Pl. Guian. p. 21, t. 29?; Fourn. Mex. Pl. Enum., Gram. p. 31.

South Mexico, San Pedro Tepinapa (*Liebmann*).

Typical *Panicum scoparium* inhabits Guiana, Brazil, and Trinidad.

85. **Panicum sorghoideum,** Hamilt. Prodr. Pl. Ind. Occ. p. 10; Fourn. Mex. Pl. Enum., Gram. p. 31.

Panicum lanatum, Swartz, *β. sorghoideum,* Griseb. Fl. Brit. W. Ind. p. 561.

South Mexico, Vera Cruz (*Gouin*).—West Indies.

86. **Panicum squamatum,** Fourn. Mex. Pl. Enum., Gram. p. 18.

Mexico, Mundo Nuevo (*Karwinski*).

87. **Panicum stipatum,** Presl, Reliq. Hænk. i. p. 297; Steud. Gram. p. 42.

It is uncertain whether this was collected in Mexico or the Philippines.

88. **Panicum stoloniferum,** Poir. Encyc. Suppl. iv. p. 274; Döll in Mart. Fl. Bras. ii. 2, p. 209; Kunth, Revis. Gram. i. t. 108.

Hymenachne frondescens, Fourn. Mex. Pl. Enum., Gram. p. 36.

South Mexico, Papantla (*Karwinski*), Tecoluta, Chinantla, and Tepinapa (*Liebmann*).—Guiana; Brazil.

89. **Panicum sulcatum,** Aubl. Pl. Guian. i. p. 50; Griseb. Fl. Brit. W. Ind. p. 547; Döll in Mart. Fl. Bras. ii. 2, p. 151, t. 26.

South Mexico, valley of Cordova (*Bourgeau*, 1457, 1663, 2599).—Trinidad; Guiana; Brazil. Hb. Kew.

90. **Panicum thrasya,** Trin., Steud. Gram. p. 55.

Thrasya paspaloides, H. B. K. Nov. Gen. et Sp. i. 121, t. 39; Kunth, Enum. Pl. i. p. 71, et Suppl. t. 10. fig. 3.

Steudel records this from Panama, but probably in error, for Humboldt and Bonpland's original habitat is "Insula Orinocensis Panumana, inter vicos Atures et San Borja."

91. **Panicum torreyi,** Fourn. Mex. Pl. Enum., Gram. p. 28.

Panicum capillare, var. *sylvaticum,* Torr. Compend. Fl. Northern and Middle States, p. 71.

Carolina.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Chinantla (*Liebmann*).

We have not succeeded in ascertaining what the North-American botanists have done with Torrey's plant, therefore we can merely copy Fournier.

92. **Panicum umbrosum,** Leconte, Cat. Pl. N. York, ex Fourn. Mex. Pl. Enum., Gram. p. 20.

Panicum pauciflorum, Ell. Sketch. Bot. Carol. i. p. 120.

Massachusetts and Wisconsin southward.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Chinantla (*Liebmann*), Zacualtipan and Real del Monte (*Berlandier*).

We have not identified anything in the Kew Herbarium with this. *Panicum pauciflorum*, Elliott, appears not to be known with certainty by American botanists, for Gray (Man. Bot. Northern U. S. ed. 5, p. 648) places a note of interrogation after the name, and states that the plant which he describes has probably been described under several names; and Chapman (Fl. Southern U. S. p. 575) copies Elliott's description. *Panicum umbrosum*, Leconte, is probably a *nomen nudum*, though this point we cannot determine as we have not seen Leconte's catalogue; but Torrey (Flora of New York, i. Preface, p. 2), who specially mentions Leconte's Catalogue, does not take up the name. Fournier, however, places the sign of certainty after both names. Steudel, in his 'Nomenclator,' cites *P. umbrosum*, Leconte, as a synonym of *P. verrucosum* of Mühlenberg.

93. **Panicum uncinatum,** Raddi, Agrostogr. Bras. p. 41; Trin. Sp. Gram. Ic. et Descr. t. 216; Fourn. Mex. Pl. Enum., Gram. p. 19; Döll in Mart. Fl. Bras. ii. 2, p. 193.

Panicum glandulosum, Nees, Agrostol. Bras. i. p. 128; Presl, Reliq. Hænk. i. p. 302.

Echinolæna polystachya, H. B. K. Nov. Gen. et Sp. i. p. 119; Ch. et Schl. in Linnæa, vi. p. 36.

South Mexico, Orizaba (*Botteri*; *Müller*, 2023; *Schaffner*; *Bourgeau*, 2820), San Juan del Rio (*Schaffner*), near Jalapa (*Schiede & Deppe*), Misantla and Jicaltepec (*Liebmann*), Cordova (*Bourgeau*, 1667), Comaltepec (*Galeotti*, 5857), Puyapatengo, near Teapa, Tabasco (*Linden*).—Peru; Brazil.

Fournier cites many more numbers than those given above; but not one of any of

those he cites is represented in the Kew Herbarium, though what he regards as this species is probably there among the unnamed ones, for the sets of Liebmann's, Schaffner's, and other collectors' plants in different herbaria are differently numbered.

94. **Panicum unisetum,** Trin.; Steud. Gram. p. 49.
Urochloa uniseta, Presl, Reliq. Hænk. i. p. 319.
MEXICO (*Hænke*).

95. **Panicum velutinosum,** Nees, Agrostol. Bras. p. 121; Trin. Sp. Gram. Ic. et Descr. t. 180; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 13); Döll in Mart. Fl. Bras. ii. 2, p. 186; Fourn. Mex. Pl. Enum., Gram. p. 19.
SOUTH MEXICO, Mirador and Zacuapan (*Galeotti*, 5710); NICARAGUA (*Lévy*, 1020).—BRAZIL.

96. **Panicum vicarium,** Fourn. Pl. Mex. Enum., Gram. p. 20.
SOUTH MEXICO.

97. **Panicum vilfoides,** Trin. Diss. ii. p. 171, et Sp. Gram. Ic. et Descr. t. 204.
Hymenachne fluviatilis, Nees, Agrostol. Bras. p. 273; Schl. in Linnæa, xxxi. p. 355; Fourn. Mex. Pl. Enum., Gram. p. 36.
SOUTH MEXICO, Consoquitla and Jicaltepec (*Liebmann*).—BRAZIL.

98. **Panicum violascens,** Kunth, Gram. i. p. 33 ?, non Steud.; Fourn. Mex. Pl. Enum., Gram. p. 17.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*, 317).
Typical *P. violascens* is a Brazilian species.

99. **Panicum virletii,** Fourn. Mex. Pl. Enum., Gram. p. 29.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*, 1305, 1371).

100. **Panicum virgatum,** Linn.; Steud. Gram. p. 77; Chapm. Fl. Southern U. S. p. 573; Fourn. Mex. Pl. Enum., Gram. p. 30.
Common in eastern NORTH AMERICA.—MEXICO, without locality (*Karwinski*).

101. **Panicum zizanioides,** H. B. K. Nov. Gen. et Sp. p. 100; Kunth, Revis. Gram. t. 28, et Enum. Pl. i. p. 118; Fourn. Mex. Pl. Enum., Gram. p. 26; Döll in Mart. Fl. Bras. ii. 2, p. 228.
Panicum oryzoides, Swartz; Griseb. Fl. Brit. W. Ind. p. 547.
SOUTH MEXICO, without locality (*Schiede & Deppe*), Queretaro (*Bonpland*), Mesachica (*Karwinski*), Cordova (*Schaffner*), Trapiche de la Concepcion (*Liebmann*); PANAMA, Chagres (*Fendler*, 370), Empire Station (*S. Hayes*, 281).—COLOMBIA; BRAZIL; GUIANA. Hb. Kew.

6. DIMORPHOSTACHYS.

Dimorphostachys, Fourn. in Comptes Rendus Acad. Par. lxxx. p. 441, et Mex. Pl. Enum., Gram. p. 13; Benth. et Hook. Gen. Plant. iii. p. 1101, sub *Panico*.

We have retained this genus, though Bentham and Hooker reduce it to *Panicum*, because we have not been able to examine the types of Fournier's proposed new species.

1. **Dimorphostachys adoperiens**, Fourn. Mex. Pl. Enum., Gram. p. 15.
SOUTH MEXICO, Orizaba (*Schaffner*).

2. **Dimorphostachys botterii**, Fourn. Mex. Pl. Enum., Gram. p. 14.
SOUTH MEXICO, near Orizaba (*Botteri*).

3. **Dimorphostachys drummondii**, Fourn. Mex. Pl. Enum., Gram. p. 15.
TEXAS.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Mundo Nuevo and Colipa (*Karwinski*), Potrero de Cazadero, Meta de San Juan, Rancho Nuevo, Colipa, &c. (*Liebmann*).

4. **Dimorphostachys ghiesbreghtii**, Fourn. Mex. Pl. Enum., Gram. p. 16.
MEXICO, without locality (*Ghiesbreght*).

5. **Dimorphostachys langei**, Fourn. Mex. Pl. Enum., Gram. p. 14.
SOUTH MEXICO, Hacienda de Jovo and Mecapulco (*Liebmann*).

6. **Dimorphostachys monostachya**, Fourn. Mex. Pl. Enum., Gram. p. 14.
Panicum monostachyum, H. B. K. Nov. Gen. et Sp. i. p. 96; Kunth, Gram. t. 104; Döll in Mart. Fl. Bras. ii. 2, p. 181.
SOUTH MEXICO, valley of Oaxaca, near Ocotlan (*Liebmann*).—BRAZIL.

7. **Dimorphostachys ? oajacensis**, Fourn. Mex. Pl. Enum., Gram. p. 16.
Paspalum oajacense, Steud. Gram. p. 21.
SOUTH MEXICO, Oaxaca (*Franco*).
Fournier had not seen Steudel's type, but thought from the description it might belong to this genus.

8. **Dimorphostachys paspaloides**, Fourn. Mex. Pl. Enum., Gram. p. 14.
SOUTH MEXICO, Vera Cruz (*Gouin*).

9. **Dimorphostachys schaffneri**, Fourn. Mex. Pl. Enum., Gram. p. 15, cum var. β. remotispicula.
SOUTH MEXICO, Cordova (*Bourgeau*, 1658), Orizaba (*Müller*; *Bourgeau*, 1598), San Juan del Rio (*Bourgeau*, 2974), Huitamalco (*Liebmann*), Mirador (*Schaffner*; *Liebmann*), Cuernavaca (*Bourgeau*, 1297).

10. **Dimorphostachys variabilis**, Fourn. Mex. Pl. Enum., Gram. p. 15.
SOUTH MEXICO, without locality (*Ghiesbreght*), Orizaba (*Botteri*).—GUIANA; BRAZIL. Hb. Kew.

7. ICHNANTHUS.

Ichnanthus, Beauv. Agrostogr. p. 56, t. 12. fig. 1; Benth. et Hook. Gen. Plant. iii. p. 1103.
Navicularia, Raddi, Agrostogr. Bras. p. 38.

An exclusively Tropical-American genus of about twenty species, as limited in Bentham and Hooker's 'Genera Plantarum.'

1. **Ichnanthus alsinoides,** Munro, MSS. in Herb. Kew. Var. ?

Panicum alsinoides, Griseb. Fl. Brit. W. Ind. p. 550.

Nicaragua, Chontales (*Tate*, 317). Hb. Kew.

This species, as understood by Grisebach, inhabits the West Indies from Cuba to Trinidad, and South America from Venezuela to Ecuador and Brazil.

2. **Ichnanthus mexicanus,** Fourn. Mex. Pl. Enum., Gram. p. 34.

South Mexico, Trapiche de la Concepcion (*Liebmann*).

3. **Ichnanthus nemorosus,** Döll in Mart. Fl. Bras. ii. 2, p. 289.

Panicum nemorosum, Swartz, Fl. Ind. Occ. i. p. 150; Trin. Sp. Gram. Ic. t. 210; Griseb. Fl. Brit. W. Ind. p. 550.

Nicaragua, Chontales (*Tate*, 222); Panama, Empire Station (*S. Hayes*, 225).—Colombia to Ecuador and Brazil and in the West Indies. Hb. Kew.

4. **Ichnanthus pallens,** Döll in Mart. Fl. Bras. ii. p. 290.

Panicum pallens, Swartz, Prodr. Fl. Ind. Occ. p. 23; Trin. Sp. Gram. Ic. t. 211; Griseb. Fl. Brit. W. Ind. p. 550; Fourn. Mex. Pl. Enum., Gram. p. 30.
Panicum hemignostum, Steud. Gram. p. 77, fide Fourn.

South Mexico, Mirador (*Liebmann*), Cordillera of Vera Cruz (*Galeotti*, 5689); Guatemala, Chojoja, Mazatenango (*Bernoulli*, 475); Nicaragua, Peña Blanca (*Tate*, 540); Panama, Chagres (*Fendler*, 373).—Venezuela to Peru and Brazil and throughout the West Indies; also Tropical Asia. Hb. Kew.

Grisebach records this from Australia; but there is no specimen in the Kew Herbarium, and it is not included in Bentham's 'Flora Australiensis.'

8. OPLISMENUS.

Oplismenus, Beauv. Fl. Owar. et Benin. ii. p. 14, t. 68, et Agrostogr. p. 53, t. 11; Benth. et Hook. Gen. Plant. iii. p. 1104 et p. 1102 (*Echinochloa,* sectio *Panici*); Fourn. Mex. Pl. Enum., Gram. p. 37.
Orthopogon, R. Br. Prodr. Fl. Nov. Holl. p. 194.
Echinochloa, Beauv. Agrostogr. p. 53, t. 11. fig. 11.

As limited by Bentham and Hooker (to the section *Orthopogon*) this genus comprises, in their estimation, only three or four species; but we follow Fournier and include *Echinochloa*, because he describes a number of reputed new species in both sections which we have not seen, and we wish to avoid adding a single unnecessary name to the almost interminable synonymy of some of the widely-dispersed and variable species of grasses.

1. **Oplismenus angustifolius,** Fourn. Mex. Pl. Enum., Gram. p. 40.

South Mexico, Vera Cruz (*Gouin*).

2. **Oplismenus chondrosioides,** Fourn. Mex. Pl. Enum., Gram. p. 38.

South Mexico, Cordova (*Bourgeau*, 1668; *Schaffner*), without locality (*Liebmann*).

3. **Oplismenus colonus,** H. B. K. Nov. Gen. et Sp. i. p. 108; Presl, Reliq. Hænk. i. p. 321; Fourn. Mex. Pl. Enum., Gram. p. 40.

Panicum colonum, Linn. Sp. Pl. ed. 2, p. 84; Kunth, Enum. Pl. i. p. 142; Trin. Sp. Gram. Ic. et Descr. t. 160; Döll in Mart. Fl. Bras. ii. 2, p. 140.

Widely spread in the warm regions of both hemispheres, including Mexico and Central America. Hb. Kew.

4. **Oplismenus crus-galli,** Kunth, Gram. i. p. 44, et Enum. Pl. i. p. 143; Trin. Sp. Gram. Ic. et Descr. tt. 161, 162; Fourn. Mex. Pl. Enum., Gram. p. 39.

Panicum crus-galli, Linn. Sp. Pl. ed. 1, p. 56; Döll in Mart. Fl. Bras. ii. 2, p. 140.
Oplismenus crus-pavonis, H. B. K. Nov. Gen. et Sp. i. p. 108; Fourn. l. c.
Panicum crus-pavonis, Nees, Agrostol. Bras. p. 259.

This is now spread over nearly all tropical and subtropical regions, including Mexico and Central America. Hb. Kew.

5. **Oplismenus depauperatus,** Fourn. Mex. Pl. Enum., Gram. p. 38.

South Mexico, Orizaba (*Müller*, 2019; *Schaffner*), Cordillera of Oaxaca (*Galeotti*, 5847).

6. **Oplismenus humboldtianus,** Nees, Agrostol. Bras. p. 264, non Presl, Reliq. Hænk. i. p. 322, ex Fourn. Mex. Pl. Enum., Gram. p. 37 (varietates).

Oplismenus burmanni, H. B. K. Nov. Gen. et Sp. i. p. 106, excl. synon.
Panicum francoi, Steud. Gram. p. 44.
Oplismenus cristatus, Presl, Reliq. Hænk. i. p. 323.
Panicum cristatum, Steud. Gram. p. 46.

Common in South Mexico and Central America, and southward; and some botanists refer certain Old-World forms of the genus to this species. Hb. Kew.

7. **Oplismenus holciformis,** H. B. K. Nov. Gen. et Sp. i. p. 107; Benth. et Hook. Gen. Plant. iii. p. 1105.

Panicum holciforme, Steud. Gram. p. 48.
Berchtoldia holciformis, Fourn. Mex. Pl. Enum., Gram. p. 41 (varietates).

South Mexico, Guadalupe (*Bourgeau*, 910), Mirador (*Schaffner*), Regla (*Galeotti*, 5810).—Ecuador. Hb. Kew.

Bentham (Journ. Linn. Soc. xix. p. 46) in reference to this says:—"*Berchtoldia junciformis*, judging from the specimens Fournier quotes, is one of the large coarse forms of *Panicum* (*Echinochloa*) very nearly allied to, if not varieties of, *Panicum crus-galli*; the other, *Berchtoldia oplismenoides*, Fourn., is unknown to me, but must, from his description, be referable also to *Echinochloa*." We have only seen Spruce's specimen of the *Oplismenus holciformis*, none of the Mexican specimens being in the Kew Herbarium.

8. **Oplismenus liebmanni,** Fourn. Mex. Pl. Enum., Gram. p. 38.

South Mexico, Zacuapan, and in pastures between La Galera and Pochutla (*Liebmann*).

9. **Oplismenus loliaceus,** Beauv. Agrostogr. p. 168; H. B. K. Nov. Gen. et Sp. i. p. 106; Presl, Reliq. Hænk. i. p. 320; Fourn. Mex. Pl. Enum., Gram. p. 38 (varietates).

Panicum loliaceum, Lam. Ill. i. p. 170; Döll in Mart. Fl. Bras. ii. 2, p. 145, t. 23.

Panicum sylvaticum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 14), non Lam.

South Mexico. Fournier cites many numbers for this species in the collections of Bourgeau, Liebmann, Botteri, Schaffner, and others, not one of which, however, is represented in the Kew Herbarium.

10. **Oplismenus polystachyus,** H. B. K. Nov. Gen. et Sp. i. p. 107; Kunth, Enum. Pl. i. p. 146; Fourn. Mex. Pl. Enum., Gram. p. 40.

Panicum bonplandianum, Steud. Gram. p. 48.

South Mexico, near Tabasco (*Linden*).—Orinoco and West Indies.

Fournier suggests that *O. jamaicensis* is the same as this.

11. **Oplismenus rariflorus,** Presl, Reliq. Hænk. i. p. 320; Fourn. Mex. Pl. Enum., Gram. p. 39.

Panicum parciflorum, Steud. Gram. p. 4.

South Mexico, Acapulco (*Hænke*), valley of Cordova (*Bourgeau*, 1301).

12. **Oplismenus setarius,** Rœm. et Schult. Syst. ii. p. 481; Schl. et Ch. in Linnæa, vi. p. 35; Fourn. Mex. Pl. Enum., Gram. p. 38.

Panicum setarium, Lam. Ill. i. p. 170; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 15); Döll in Mart. Fl. Bras. ii. 2, p. 147.

Orthopogon setarius, Sprengel, Syst. Veg. i. p. 306.

Texas.—Mexico and Central America, common.—South America. Hb. Kew.

13. **Oplismenus spectabilis,** Kunth, Enum. Pl. i. p. 145.

Panicum spectabile, Nees, Agrostol. Bras. p. 262; Trin. Sp. Gram. Ic. et Descr. t. 166; Döll in Mart. Fl. Bras. ii. 2, p. 143; Griseb. Fl. Brit. W. Ind. p. 546.

South Mexico, Tabasco (*Linden*, 1352).—Cuba to Trinidad, Guiana, and Brazil. Hb. Kew.

Linden's plant referred to this species is probably the same as that referred to *O. polystachyus* by Fournier.

14. **Oplismenus thiebauti,** Fourn. Mex. Pl. Enum., Gram. p. 39.

South Mexico, Acapulco (*Thiebaut*).

15. **Oplismenus zelayensis,** H. B. K. Nov. Gen. et Sp. i. p. 108; Kunth, Enum. i. p. 143; Fourn. Mex. Pl. Enum., Gram. p. 40.

Panicum zelayense, Steud. Gram. p. 47.

South Mexico, near Zelaya, Queretaro and Pazcuaro at 6000 feet (*Humboldt & Bonpland*), valley of Mexico (*Berlandier*, 1369, 2320), between Mexico and Tacubaya

(*Bourgeau*, 236), Pital (*Liebmann*), valley of Guadalupe (*Schaffner*), valley of Cordova (*Bourgeau*), Orizaba (*Botteri*, 159; *Müller*, 2049). Hb. Kew.

[*Oplismenus tenuis*, Presl, Reliq. Hænk. i. p. 319=*Panicum exile*, Steud. Gram. p. 45, is a doubtful species not identified by Fournier.]

9. CHÆTIUM.

Chætium, Nees, Agrostol. Bras. p. 269; Benth. et Hook. Gen. Plant. iii. p. 1104.
Berchtoldia, Presl, Reliq. Hænk. i. p. 323, t. 43.

This genus is here limited as in Bentham and Hooker's 'Genera Plantarum,' the two other species proposed by Fournier being referred to *Oplismenus*—see *O. holciformis*. Besides the following, there is one Brazilian species.

1. **Chætium bromoides**, Benth. in Journ. Linn. Soc. xix. p. 46, et in Gen. Plant. iii. p. 1105.

Berchtoldia bromoides, Presl, Reliq. Hænk. i. p. 324, t. 43; Fourn. Mex. Pl. Enum., Gram. p. 40.
Panicum berchtoldia, Döll in Mart. Fl. Bras. ii. 2, p. 150 in nota, sub *Panico chætio*.

South Mexico, near Orizaba (*Bourgeau*, 2597), Vera Cruz (*Liebmann*); Guatemala, San Gerónimo (*Godman & Salvin*). Hb. Kew.

10. SETARIA.

Setaria, Beauv. Fl. Owar. et Benin, ii. p. 80, quoad char. gen., non t. 110, ex Benth. et Hook. Gen. Plant. iii. p. 1105.

This genus is now spread over nearly all tropical and temperate regions, and many species have been proposed; but Bentham estimates that there are scarcely more than ten distinct ones. We have seen no authenticated specimens of Fournier's Mexican new species; but there are a considerable number of forms in the Kew Herbarium referred to *S. glauca*, &c., which may represent some of them.

1. **Setaria auriculata**, Fourn. Mex. Pl. Enum., Gram. p. 43, cum *β. depauperata*, l. c. p. 44.

South Mexico, Campeachy (*Linden*), Manantial (*Liebmann*), valley of Orizaba (*Müller*, 2047; *Schaffner*).

2. **Setaria caudata**, Rœm. et Schult. Syst. Veg. ii. p. 495; Fourn. Mex. Pl. Enum., Gram. p. 44.

Panicum caudatum, Lam. Ill. i. p. 171.

Texas; New Mexico.—Mexico, Acapulco (*Thiebaut*).—West Indies, and southward to Uruguay.

To this Fournier doubtingly refers *Setaria rariflora*, Presl, Reliq. Hænk. i. p. 313=*Panicum rariflorum*, Steud. Gram. p. 51=*Panicum dissitiflorum*, Steud. Nomencl. Bot.

3. **Setaria cirrosa,** Fourn. Mex. Pl. Enum., Gram. p. 43.

South Mexico, San Augustin (*Liebmann*).

"Haud procul abest *Setaria longiseta*, Beauv. Owar. t. 110, quæ tamen spicis laxioribus gaudet et magis compositis."—*Fournier*.

4. **Setaria composita,** H. B. K. Nov. Gen. et Sp. i. p. 110; Fourn. Mex. Pl. Enum., Gram. p. 44.

Panicum compositum, Nees, Agrostol. Bras. p. 244.

Panicum macrostachyum, Döll in Mart. Fl. Bras. ii. 2, p. 166, partim.

Mexico, without locality (*Hahn, Karwinski*), Taboga (*Thiebaut*); Nicaragua (*Lévy*).—Southward to Brazil.

5. **Setaria effusa,** Fourn. Mex. Pl. Enum., Gram. p. 42.

South Mexico, Orizaba and near Cordova (*Bourgeau*, 1457, 2599; *Schaffner*), Mirador, Tonaguia, and Trapiche de la Concepcion (*Liebmann*).

6. **Setaria falcifolia,** Fourn. Mex. Pl. Enum., Gram. p. 44.

Mexico, without locality (*Jurgensen*, 622).

7. **Setaria flava,** Kunth, Gram. i. p. 46, et Enum. Pl. i. p. 149; Fourn. Mex. Pl. Enum., Gram. p. 45.

Panicum flavum, Nees, Agrostol. Bras. p. 238; Döll in Mart. Fl. Bras. ii. 2, p. 159.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, valley of Mexico (*Bourgeau*, 231), Jalapa &c. (*Galeotti*, 5803, 5849), Colipa, Mirador, Chinantla, and other localities (*Liebmann*), Orizaba (*Schaffner*), Cordova (*Bourgeau*, 2202).—Peru; Brazil. Hb. Kew.

8. **Setaria geniculata,** Rœm. et Schult. Syst. Veg. ii. p. 491; Fourn. Mex. Pl. Enum., Gram. p. 46 (varietates plures).

Panicum geniculatum, Lam. Encycl. Method. iv. p. 737; Döll in Mart. Fl. Bras. ii. 2, p. 158.

Pennisetum geniculatum, Jacq. Ecl. Gram. t. 27.

Panicum glaucum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 15).

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Cordova (*Bourgeau*, 2202 *bis*), Orizaba (*Schaffner*), Vera Cruz (*Gouin*), San Pedro Nolasco and Comaltepec (*Galeotti*, 5883, 5863), Orizaba (*Bourgeau*, 2369).—West Indies to Brazil and Chili. Hb. Kew.

9. **Setaria grisebachii,** Fourn. Mex. Pl. Enum., Gram. p. 45.

South Mexico, around Mexico (*Berlandier*, 622), valley of Mexico (*Bourgeau*, 441, 1159), Orizaba (*Schaffner*), Tehuacan (*Liebmann*). Hb. Kew.

10. **Setaria imberbis,** Rœm. et Schult. Syst. Veg. ii. p. 891; Fourn. Mex. Pl. Enum., Gram. p. 46 (varietates).

Panicum imberbe, Poir, Encycl. Suppl. iv. p. 272; Rupr. Bull. Acad. Brux. ix. (reprint, p. 16); Döll in Mart. Fl. Bras. ii. 2, p. 156.

Setaria purpurascens, H. B. K. Nov. Gen. et Sp. i. p. 110; Schl. et Ch. in Linnæa, vi. p. 35.

Panicum purpurascens, Nees, Agrostol. Bras. p. 240.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Zacuapan (*Galeotti*, 5687), Barranca near Santa Fé (*Bourgeau*, 438 in part), near Tacubaya (*Schaffner*), Jalapa (*Schiede & Deppe*).—South America. Hb. Kew.

11. **Setaria jurgensenii,** Fourn. Mex. Pl. Enum., Gram. p. 42.

Mexico, without locality (*Jurgensen*).

12. **Setaria lævis,** Fourn. Mex. Pl. Enum., Gram. p. 45

Mexico (*Karwinski*).

13. **Setaria liebmanni,** Fourn. Mex. Pl. Enum., Gram. p. 44.

South Mexico, Manantial (*Liebmann*).

14. **Setaria longipila,** Fourn. Mex. Pl. Enum., Gram. p. 47.

Mexico, without locality (*Jurgensen*, 722).

15. **Setaria macrostachya,** H. B. K. Nov. Gen. et Sp. i. p. 110, excl. syn.; Presl, Reliq. Hænk. i. p. 315, ex Fourn. Mex. Pl. Enum., Gram. p. 45.

Panicum macrostachyum, Nees, Agrostol. Bras. p. 245; Döll in Mart. Fl. Bras. ii. 2, p. 166, partim.

South Mexico, without locality (*Schiede*), Mirador (*Liebmann*), between Salamanca and Zelaya (*Humboldt & Bonpland*).—West Indies; Brazil. Hb. Kew.

16. **Setaria onurus,** Griseb. Fl. Brit. W. Ind. p. 555; Fourn. Mex. Pl. Enum., Gram. p. 44.

Panicum onurus, Willd. in Nees, Agrostol. Bras. p. 251.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, around the city of Mexico (*Berlandier*, 907), Santa Ines (*Hahn*).—West Indies to Brazil.

17. **Setaria paniculifera,** Fourn. Mex. Pl. Enum., Gram. p. 42.

Panicum paniculiferum, Steud. Gram. p. 54.

South Mexico, Oaxaca (ex *Steudel*), Comaltepec, in the region of Oaxaca at 3000 feet (*Galeotti*, 5858).

18. **Setaria penicillata,** Presl, Reliq. Hænk. i. p. 314; Fourn. Mex. Pl. Enum., Gram. p. 46.

Setaria glauca, H. B. K. Nov. Gen. et Sp. i. p. 109, excl. syn. ex Fourn.

South Mexico, Papantla (*Karwinski*), Campeachy (*Linden*), Santa Fé near Vera Cruz (*Gouin*).

19. **Setaria pseudoverticillata,** Fourn. Mex. Pl. Enum., Gram. p. 43.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

20. **Setaria schiedeana,** Fourn. Mex. Pl. Enum., Gram. p. 43.

Ixophorus schiedeanus, Schl. in Linnæa, xxxi. p. 421.

South Mexico, Atlacomulco (*Schiede*).

21. **Setaria semirugosa,** Kunth, Enum. Pl. i. p. 152; Fourn. Mex. Pl. Enum., Gram. p. 47.

Panicum rugosum, Nees, Agrostol. Bras. p. 243; Döll in Mart. Fl. Bras. ii. 2, p. 167.

South Mexico (*Karwinski*).—Brazil.

22. **Setaria streptobotrys,** Fourn. Mex. Pl. Enum., Gram. p. 47.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Real del Monte, 6000 feet (*Galeotti*, 5832), Chinantla and Mirador (*Liebmann*), Orizaba (*Müller*, 2067), valley of Mexico (*Bourgeau*, 231 in part; *Schaffner*). Hb. Kew.

23. **Setaria sulcata,** Raddi, Agrostogr. Bras. p. 50; Fourn. Mex. Pl. Enum., Gram. p. 42 (varietates).

Panicum (*Ptychophyllum*) *sulcatum,* Aublet, Guian. i. p. 50; Döll in Mart. Fl. Bras. ii. 2, p. 152, t. 26.

South Mexico, valley of Cordova (*Bourgeau*, 1663; *Schaffner*), Mirador (*Liebmann*), Oaxaca at 3000 feet (*Galeotti*, 5856).—West Indies; Brazil. Hb. Kew.

24. **Setaria uniseta,** Fourn. Mex. Pl. Enum., Gram. p. 43.

Panicum unisetum, Trin.; Steud. Gram. p. 173; Schl. in Linnæa, xxxi. pp. 396, 398.

Urochloa uniseta, Presl, Reliq. Hænk. i. p. 319.

Ixophorus unisetus, Schl. in Linnæa, xxxi. p. 421.

Mexico, Hacienda de Naranjo (*Karwinski*), without locality (*Hænke*).

25. **Setaria viridis,** Beauv. Agrostogr. p. 51; Kunth, Enum. Pl. i. p. 151; Fourn. Mex. Pl. Enum., Gram. p. 47.

Mexico? (*Liebmann*).

11. CENCHRUS.

Cenchrus, Linn. Gen. Plant. n. 1149, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1105.

A genus of about a dozen species, very widely diffused in tropical and subtropical regions of both hemispheres. In this, as in several other genera, Fournier has founded a number of new species of which we have not seen authenticated specimens.

1. **Cenchrus brevisetus,** Fourn. Mex. Pl. Enum., Gram. p. 50.

South Mexico, valley of Orizaba (*Bourgeau*, 3140; *Schaffner*; *Botteri*, 133); Nicaragua (*Lévy*, 235). Hb. Kew.

2. **Cenchrus echinatus,** Linn. Sp. Pl. ed. 1, p. 1050; Ch. et Schl. in Linnæa, vi. p. 36; Benth. Pl. Hartw. p. 28; Fourn. Mex. Pl. Enum., Gram. p. 50; S. Wats. in Proc. Am. Acad. xviii. p. 173.

A very widely dispersed species, found in Mexico and Central America. Hb. Kew.

3. **Cenchrus multiflorus,** Presl, Reliq. Hænk. i. p. 318; Fourn. Mex. Pl. Enum., Gram. p. 49.

South Mexico, San Augustin, Oaxaca (*Liebmann*), on the Pacific coast (*Galeotti*, 5580). Hb. Kew.

4. **Cenchrus myosuroides,** H. B. K. Nov. Gen. et Sp. i. p. 115, t. 35; Fourn. Mex. Pl. Enum., Gram. p. 50.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Juquila, on the Pacific coast (*Galeotti*, 5753).—Colombia; Peru; Cuba.

5. **Cenchrus pallidus,** Fourn. Mex. Pl. Enum., Gram. p. 50.

South Mexico, Puerto de Santa Cruz, near Tehuantepec, Oaxaca (*Liebmann*). Hb. Kew.

6. **Cenchrus pilosus,** H. B. K. Nov. Gen. et Sp. i. p. 116, t. 36; Fourn. Mex. Pl. Enum., Gram. p. 50.

South Mexico, Campeachy (*Linden*).—Venezuela.

7. **Cenchrus pungens,** H. B. K. Nov. Gen. et Sp. i. p. 115; Fourn. Mex. Pl. Enum., Gram. p. 50.

Mexico (*Virlet d'Aoust*).—Peru.

8. **Cenchrus roseus,** Fourn. Mex. Pl. Enum., Gram. p. 50.

South Mexico, Vera Cruz (*Gouin*).

9. **Cenchrus tribuloides,** Linn. Sp. Pl. ed. 1, p. 1050; Nees, Agrostol. p. 288; Fourn. Mex. Pl. Enum., Gram. p. 51.

Virginia to Texas and California.—South Mexico, Vera Cruz (*Virlet d'Aoust; Gouin; Liebmann*), Real del Monte (*Galeotti*, 5825), Guadalupe near Mexico (*Bourgeau*, 537), Mirador (*Schaffner*), Huatusco (*Liebmann*).

12. PENNISETUM.

Pennisetum, Pers. Syn. Pl. i. p. 72; Benth. et Hook. Gen. Plant. iii. p. 1105.

A genus of about forty species, for the greater part African, and two or three of which are widely dispersed, whilst a very few are endemic in the Mascarene Islands, Australia, and Tropical America.

1. **Pennisetum bambusiforme,** Hemsl.

Gymnothrix bambusiformis, Fourn. Mex. Pl. Enum., Gram. p. 48.

South Mexico, near Mirador (*Schaffner*).

2. **Pennisetum complanatum,** Hemsl.

Gymnothrix complanata, Nees in Bonplandia, 1855, p. 83, et in Seem. Bot. Voy. 'Herald, p. 224.

Guatemala, Dueñas (*Salvin*); Panama, Boquete, Veraguas (*Seemann*, 1560). Hb. Kew.

3. **Pennisetum flavescens,** Presl, Reliq. Hænk. i. p. 49.

Mexico (*Hænke*).

A doubtful plant, perhaps not different from *P. setosum*. Fournier did not see it.

4. **Pennisetum humboldtianum,** Hemsl.

Gymnothrix crinita, H. B. K. Nov. Gen. et Sp. i. p. 112; Kunth, Enum. Pl. i. p. 159; Fourn. Mex. Pl. Enum., Gram. p. 47.

Mexico, on the shores of Lake Cuisco near la Puerta de Andaracuas, and near Santa Rosa at 5400 feet (*Humboldt & Bonpland*).

Fournier, rightly or wrongly, refers several specimens in recent collections to this species. See remarks under *P. mexicanum*.

5. **Pennisetum karwinskii,** Schrad. in Linnæa, xii. p. 43; Fourn. Mex. Pl. Enum., Gram. p. 49.

Mexico (*Karwinski*).

Fournier states that this was not found among Karwinski's plants of the St. Petersburg Herbarium.

6. **Pennisetum mexicanum,** Hemsl.

Gymnothrix mexicana et *G. grisebachiana,* Fourn. Mex. Pl. Enum., Gram. p. 48.

South Mexico, Orizaba (*Bourgeau,* 3139; *Müller*, 2015, 2067), Papantla (*Liebmann*). Hb. Kew.

Fournier refers Müller's 2067 to *Gymnothrix crinita*, but the Kew specimen bearing this number is the same as 2015 and as Bourgeau's 3139. On the other hand, the *Pennisetum setosum* of Bentham's 'Plantæ Hartwegianæ,' which Fournier also refers to *Gymnothrix crinita*, is certainly different from Müller's plant, though it may be true *crinita*. It is very probable that Fournier had different species under the numbers in question. *P. mexicanum* is perhaps hardly specifically different from *P. complanatum*.

7. **Pennisetum multiflorum,** Fourn. Mex. Pl. Enum., Gram. p. 49.

Fournier merely describes the inflorescence and flowers of this, and adds "confusum cum ceteris."

8. **Pennisetum nervosum,** Trin.; Steud. Gram. p. 102.

Gymnothrix nervosa, Nees, Agrostol. Bras. p. 277; Döll in Mart. Fl. Bras. ii. 2, p. 302; Fourn. Mex. Pl. Enum., Gram. p. 47.

South Mexico, Tampico ("*herb. Uzac*" ex Fournier).—Brazil.

9. **Pennisetum nicaraguense,** Fourn. in Bull. Soc. Bot. France, xxvii. p. 293.

Nicaragua, around Granada (*Lévy*, 1304).

10. **Pennisetum setosum,** Rich. in Pers. Syn. Pl. i. p. 72; Nees, Agrostol. Bras. p. 282; Trin. Sp. Gram. Ic. et Descr. t. 20; Griseb. Fl. Brit. W. Ind. p. 555; Fourn. Mex. Pl. Enum., Gram. p. 49.

Pennisetum purpurascens, H. B. K. Nov. Gen. et Sp. i. p. 113; Ch. et Schl. in Linnæa, vi. p. 36.

North Mexico, Sierra Madre (*Seemann*, 1953); South Mexico, Hacienda de la Laguna (*Schiede*), Trapiche de la Concepcion, Oaxaca (*Liebmann*), Acapulco (*Hinds*).—West Indies; Brazil.

The specimens referred to this species in Bentham's 'Plantæ Hartwegianæ,' p. 53, and subsequently (p. 348) referred to *Gymnothrix crinita*, H. B. K., certainly belong to the section *Gymnothrix*, but we are doubtful as to the species.

11. **Pennisetum tristachyum,** Steud. Gram. p. 103.

Gymnothrix tristachya, H. B. K. Nov. Gen. et Sp. i. p. 113, vii. t. 678; Fourn. Mex. Pl. Enum., Gram. p. 48.
Gymnothrix distachya, Fourn. l. c.
Pennisetum distachyum, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 16).

South Mexico, valley of Cordova and Rio Blanco, Orizaba (*Bourgeau*, 1664, 2543), Vera Cruz to Orizaba (*Müller*, 2066), Mirador (*Liebmann*), Cordillera of Vera Cruz (*Galeotti*, 5680).—West Indies; Brazil. Hb. Kew.

12. **Pennisetum uniflorum,** H. B. K. Nov. Gen. et Sp. i. p. 114, t. 34; Presl, Reliq. Hænk. i. p. 317; Fourn. Mex. Pl. Enum., Gram. p. 49.

South Mexico, Trapiche de la Concepcion, Lobani and Petlapa (*Liebmann*), without locality (*Hænke*).—Peru.

13. SPARTINA.

Spartina, Schreb. Gen. Plant. p. 43; Benth. et Hook. Gen. Plant. iii. p. 1108.

Species about half a dozen, one of which is widely diffused in maritime districts of Europe, Africa, and America, and has received various names; three or four inhabit North America, one extra-tropical South America, and one is peculiar to the Tristan da Cunha group and Amsterdam Island.

1. **Spartina gouini,** Fourn. Mex. Pl. Enum., Gram. p. 135.

South Mexico, Vera Cruz (*Gouin*).

14. STENOTAPHRUM.

Stenotaphrum, Trin. Fund. Agrostogr. p. 175; Benth. et Hook. Gen. Plant. iii. p. 1108.
Diastemanthe, Steud. Gram. p. 360.

Two or three species, very widely dispersed, especially in maritime districts, including many of the most remote oceanic islands.

1. **Stenotaphrum americanum,** Schrank, Hort. Monac. t. 98; Kunth, Enum. Pl. i. p. 138; Fourn. Mex. Pl. Enum., Gram. p. 37.
Stenotaphrum glabrum, Trin. Fund. Agrostogr. p. 176.
Rottboellia compressa, Beauv. Agrostogr. t. 21. fig. 8.
Diastemanthe platystachys, Steud. Gram. p. 360.

A very widely dispersed, chiefly littoral, plant, found on the coast of Mexico and Central America. Hb. Kew.

15. OLYRA.

Olyra, Linn. Gen. Plant. n. 1045 ; Benth. et Hook. Gen. Plant. iii. p. 1110.

A genus of about twenty species, whereof one is Tropical African and the rest Tropical American.

1. **Olyra latifolia,** Linn. Amœn. Acad. v. p. 408; Griseb. Fl. Brit. W. Ind. p. 535; Benth. Bot. Voy. 'Sulphur,' p. 177 ; Döll in Mart. Fl. Bras. ii. 2, p. 316 ; Fourn. Mex. Pl. Enum., Gram. p. 3.

Olyra paniculata, Swartz, Observ. Bot. p. 347.

South Mexico, Jicaltepec, Colipa, Santa Barbara, Guatulco, and other localities (*Liebmann*), Papantla &c. (*Karwinski*) ; Honduras, Gulf of Fonseca (*Hinds*) ; Nicaragua, Chontales (*Tate*, 279) ; Panama (*S. Hayes*, 60).—Colombia to Guiana and Brazil and throughout the West Indies. Hb. Kew.

2. **Olyra pauciflora,** Swartz, Fl. Ind. Occ. i. p. 125 ; Kunth, Enum. Pl. i. p. 68 ; Döll in Mart. Fl. Bras. ii. 2, p. 327 ; Griseb. Fl. Brit. W. Ind. p. 536.

Lithachne axillaris, Beauv. Agrostogr. p. 135, t. 24. fig. 2 ; Fourn. Mex. Pl. Enum., Gram. p. 4.

South Mexico, Mirador, Colipa, Misantla, Huitamalco, and various other localities (*Liebmann*).—West Indies ; Colombia ; Guiana ; Brazil.

3. **Olyra semiovata,** Trin. Sp. Gram. Ic. et Descr. t. 347 ; Griseb. Fl. Brit. W. Ind. p. 535 ; Döll in Mart. Fl. Bras. ii. 2, p. 320 ; Fourn. Mex. Pl. Enum., Gram. p. 3.

South Mexico, Lacoba, Chinantla (*Liebmann*).—Trinidad ; Brazil. Hb. Kew.

4. **Olyra strictiflora,** Hemsl.

Strephium strictiflorum, Fourn. in Bull. Soc. Bot. Belg. xv. p. 461, et Mex. Pl. Enum., Gram. p. 4.

South Mexico, Hacienda de Jovo and Mirador (*Liebmann*). Hb. Kew.

16. PHARUS.

Pharus, Linn. Gen. Plant. n. 1063 ; Benth. et Hook. Gen. Plant. iii. p. 1110.

An exclusively American genus of about five very closely allied species, ranging from Florida and Mexico to Brazil.

1. **Pharus latifolius,** Linn. Sp. Pl. ed. 2, p. 1408 ; Griseb. Fl. Brit. W. Ind. p. 536 ; Fourn. Mex. Pl. Enum., Gram. p. 3.

Pharus brasiliensis, var. *mexicana,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 20).

Pharus vittatus, Lemaire, Flore des Serres, t. 316 ; Steud. Gram. p. 8 ?

Florida.—South Mexico, Zacuapan 3000 feet (*Galeotti*, 5713), Mirador (*Liebmann*, 67 ; *Linden*, 107), without locality (*Harris*) ; Panama, Lion Hill (*S. Hayes*, 466).—Southward to Ecuador and Brazil, and throughout the West Indies. Hb. Kew.

Tribe II. MAYDEÆ.

Maydeæ, Benth. et Hook. Gen. Plant. iii. pp. 1075, 1078.

This tribe comprises only eight small genera, the majority of which are American. *Coix* alone is represented in Africa.

17. COIX.

Coix, Linn. Gen. Plant. n. 1043; Benth. et Hook. Gen. Plant. iii. p. 1112.

Species three or four, one of which (*C. lacryma*) is now almost generally diffused in the tropics, either wild or naturalized, though it does not appear to have reached Australia; the others are restricted to India.

1. **Coix lacryma**, Linn. Sp. Pl. ed. 1, p. 972; Kunth, Enum. Pl. i. p. 20; Döll in Mart. Fl. Bras. ii. 2, p. 30, t. 10; Griseb. Fl. Brit. W. Ind. p. 561; Lam. Ill. t. 50.
Coix arundinacea, Lam. Encycl. iii. p. 422, non Kœnig in Willd.; S. Wats. in Proc. Am. Acad. xviii. p. 173; Steud. Gram. p. 9.

North Mexico, Saltillo, Coahuila (*Palmer*, 1337). Hb. Kew.

Grisebach treats this as an introduced plant in the West Indies, whilst Döll seems to have regarded it as indigenous in South America. The only Mexican specimen that we have seen is Palmer's, cited above, and there is no specimen in the Kew Herbarium from any part of Central America. Seemann does not include it in his "Flora of Panama" (Bot. Voy. 'Herald'), nor Fournier in his enumeration of Lévy's Nicaraguan grasses (Bull. Soc. Bot. France, xxvii. p. 292). Nevertheless Lamarck founded his *Coix arundinacea*, in part at least, on a figure in Hernandez's 'Rerum Med. Nov. Hisp. Thesaurus' (p. 282, figura dextra), and Hernandez cites two Mexican names for it; hence, if originally introduced into Mexico, it was probably at a somewhat remote period. This grass is now so common in most hot countries that collectors often neglect to preserve specimens, and sometimes, when specimens of naturalized plants are sent, they are not incorporated in the herbarium; and these circumstances are sufficient to explain the absence of Mexican and Central-American specimens at Kew.

18. TRIPSACUM.

Tripsacum, Linn. Gen. Plant. n. 1044; Benth. et Hook. Gen. Plant. iii. p. 1113.

The genus is limited to the following American species. Fournier distinguishes four species.

1. **Tripsacum dactyloides**, Linn. Sp. Pl. ed. 2, p. 1378; Kunth, Enum. Pl. i. p. 469; Hackel in Mart. Fl. Bras. ii. 3, p. 316; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 650; Benth. Pl. Hartw. p. 28.
Tripsacum monostachyum, Willd. Hort. Berol. i. t. 1; Griseb. Fl. Brit. W. Ind. p. 557.
Tripsacum lanceolatum, Rupr. in Benth. Pl. Hartw. p. 347 (nomen tantum); Fourn. Mex. Pl. Enum., Gram. p. 68, cum *β. monostachys* (descriptio).
Tripsacum compressum, Fourn. in Bull. Soc. Bot. Belg. xv. p. 465.

CONNECTICUT and PENNSYLVANIA to ILLINOIS and southward.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Mirador (*Schaffner*), Aguas Calientes (*Hartweg*, 252), Pedregal (*Bourgeau*, 444).—JAMAICA; TRINIDAD; BRAZIL. Hb. Kew.

2. **Tripsacum fasciculatum,** Trin. in Bull. Acad. Brux. ix. (reprint, p. 17, nomen tantum); Aschers. in Bot. Zeit. 1877, p. 525 (descriptio); Fourn. Mex. Pl. Enum., Gram. p. 69.

Tripsacum dactyloides, Ch. et Schl. in Linnæa, vi. p. 40, non Linn.

SOUTH MEXICO, Hacienda de la Laguna (*Schiede*), Orizaba (*Bourgeau*, 3138), Zacuapan at 3000 feet, and Arumbaro, near Morelia, Michoacan, at 3500 to 5000 feet (*Galeotti*, 5796, 5844), Mirador (*Liebmann*). Hb. Kew.

19. EUCHLÆNA.

Euchlæna, Schrad. Ind. Sem. Hort. Gœtt. 1832, ex Linnæa, viii. Litter.-Ber. p. 25; Benth. et Hook. Gen. Plant. iii. p. 1114.

Reana, Brign. Ind. Sem. Hort. Modena, 1850, ex Flora, 1850, p. 400.

This genus is restricted to Mexico and Central America. The number of species is uncertain.

1. **Euchlæna bourgæi,** Fourn. in Bull. Soc. Bot. Belg. xv. p. 467, et Mex. Pl. Enum., Gram. p. 69.

SOUTH MEXICO, Chiquihita, valley of Mexico (*Bourgeau*, absque numero).

This species, which we have not seen, was founded on a male specimen.

2. **Euchlæna luxurians,** Durieu de Maisonneuve et Ascherson in Bull. Mens. Soc. Linn. Par. 1877, no. 14, p. 105 (January 1877); Fourn. Mex. Pl. Enum., Gram. p. 70; Bot. Mag. t. 6414.

Reana luxurians, Dur. de Mais. in Bull. Soc. d'Acclim. sér. 2, ix. p. 581.

Euchlæna mexicana, Fourn. in Bull. Soc. Bot. Belg. xv. p. 467, partim, non Schrad.

NORTH MEXICO, mountains of San Miguelito, San Luis Potosi (*Schaffner*); SOUTH MEXICO, San Augustin near the Pacific (*Liebmann*); GUATEMALA. Hb. Kew.

The only wild specimen of the genus we have seen is that collected by Schaffner, and referred by Bentham to this species. By the side of the cultivated ones it is a mere miniature, and, if correctly named, gives us reason to suppose that there may be only one species. Schaffner records that is the "Mais coyote" of the natives; a name attributed to *Tripsacum fasciculatum* by Galeotti (Bull. Acad. Brux. ix., reprint, p. 17).

3. **Euchlæna mexicana,** Schrad. Ind. Sem. Hort. Gœtt. 1832, ex Linnæa, viii., Litter.-Ber. p. 25; Aschers. in Verhandl. Bot. Verein Prov. Brandenb. 1875, p. 76, et in Bull. Mens. Soc. Linn. Par. 1877, no. 14, p. 105, et Bot. Zeit. 1877, pp. 521–526; Fourn. Mex. Pl. Enum., Gram. p. 70.

Euchlæna giovanninii, Fourn. in Bull. Soc. Bot. Belg. xv. p. 467, et l. c. p. 69.

Reana giovanninii, Brign. Ind. Sem. Hort. Modena, 1850; Walp. Ann. iii. p. 71.

MEXICO.

20. ZEA.

Zea, Linn. Gen. Plant. n. 1042; Benth. et Hook. Gen. Plant. iii. p. 1114.

A monotypic genus.

1. **Zea mays,** Linn. Sp. Pl. ed. 1, p. 971; Fourn. Mex. Pl. Enum., Gram. p. 70.

Maize or Indian corn is cultivated in Mexico and Central America. It is almost certainly of American origin, though the wild condition is unknown.

Tribe III. ORYZEÆ.

Oryzeæ, Benth. et Hook. Gen. Plant. iii. pp. 1075 et 1079.

This small tribe, which is sparsely represented in Europe, Asia, Africa, America, and Australia, consists of aquatic or subaquatic grasses. Nine genera are admitted by Bentham and Hooker and about thirty species.

21. LUZIOLA.

Luziola, Juss. Gen. Plant. p. 33; Benth. et Hook. Gen. Plant. iii. p. 1115.

An exclusively American genus of about six species, ranging from the southern United States to Brazil.

1. **Luziola peruviana,** Pers. Syn. Pl. ii. p. 575; Kunth, Enum. Pl. i. Suppl. p. 9; Döll in Mart. Fl. Bras. ii. 2, p. 17, t. 5; Fourn. Mex. Pl. Enum., Gram. p. 1; Griseb. Fl. Brit. W. Ind. p. 535.

Luziola mexicana, H. B. K. Nov. Gen. et Sp. i. p. 199.

South Mexico, between Tula and Queretaro, at 6000 feet (*Humboldt & Bonpland*), Orizaba (*Schaffner*).—Peru, Guiana, Brazil, and Trinidad.

We have seen no Mexican specimens; but in the 'Genera Plantarum' a distinction is drawn between *L. peruviana* proper, *L. peruviana,* Mey. Prim. Fl. Esseq. t. 2, and some others; the former having, it is stated, both the male and the female flowers in terminal panicles, whilst the females in the latter are lateral. This distinction may possibly hold good with regard to *L. alabamensis* and an undescribed specimen from Guiana; but, as Döll observes, in *L. peruviana* it is only when the culms are wholly female that the terminal panicle is female—"Paniculæ femineæ in culmis monœcis axillares, ambitu subovatæ, plerumque duæ vel tres, in culmis mere femineis terminales tumque plerumque majores, ambitu oblongæ atque elongatæ."

22. ORYZA.

Oryza, Linn. Gen. Plant. n. 1042; Benth. et Hook. Gen. Plant. iii. p. 1116.

An Asiatic genus of about five distinct species, according to Bentham, though nearly twenty have been described. *O. sativa* is now cultivated in all warm countries, and is also more or less established in a wild state.

23. LEERSIA.

Leersia, Swartz, Nov. Gen. et Sp. Pl. p. 21; Benth. et Hook. Gen. Plant. iii. p. 1117.

Five species are known, all of which are indigenous in America; one of them (*L. oryzoides*) is also frequent in Temperate Europe and Asia; and *L. hexandra*, Swartz, is widely spread in the tropical regions of the Old World. We have only seen two specimens of this genus from Mexico, and one single culm from Nicaragua, therefore we can merely extract from Fournier without making any comparisons.

1. **Leersia gouini,** Fourn. Mex. Pl. Enum., Gram. p. 2.

Leersia mexicana, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 19), non H. B. K.

South Mexico, sand dunes on the coast of Vera Cruz (*Galeotti*, 5700; *Gouin*).

2. **Leersia hexandra,** Swartz, Prodr. Fl. Ind. Occ. p. 21; Griseb. Fl. Brit. W. Ind. p. 535; Fourn. Mex. Pl. Enum., Gram. p. 2.

Leersia mexicana, H. B. K. Nov. Gen. et. Sp. i. p. 195; Kunth, Gram. i. p. 179, t. 1.

Oryza hexandra et *O. mexicana*, Döll in Mart. Fl. Bras. ii. 2, p. 10.

Florida to Texas.—Mexico, valley of Mexico, between Chalco and Jochimilco, at 10,500 feet (*Humboldt & Bonpland*), near Tacubaya (*Schaffner*), Orizaba (*Schaffner; Müller*, 2107, 2178), Mirador (*Liebmann*); Nicaragua, Greytown (*Tate*, 60).—South America; West Indies; Africa; Asia; Australia. Hb. Kew.

3. **Leersia ligularis,** Trin. in Mém. Acad. Sc. St. Pétersb. 6 série, iii. Botanique, p. 168; Steud. Gram. p. 1; Fourn. Mex. Pl. Enum., Gram. p. 2.

South Mexico, near Jalapa, in woods of Macultepec (*Schiede*), without locality (*Jurgensen*, 688).

4. **Leersia monandra,** Swartz, Prodr. Fl. Ind. Occ. p. 21; Kunth, Enum. Pl. i. p. 6; Griseb. Fl. Brit. W. Ind. p. 535; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 20); Fourn. Mex. Pl. Enum., Gram. p. 2.

Oryza monandra, Döll in Mart. Fl. Bras. ii. 2, p. 9.

Florida; Texas.—South Mexico, Zacuapan, Vera Cruz at 1500 to 3000 feet (*Galeotti*, 5724), Cordova (*Schaffner; Bourgeau*), Mirador (*Liebmann*).—West Indies to Brazil.

5. **Leersia ovata,** Poir. in Lam. Encycl., Suppl. iii. p. 329; Steud. Gram. p. 2; Fourn. Mex. Pl. Enum., Gram. p. 2.

Eastern North America.—South Mexico, Potrero de Cazadero (*Liebmann*), Colipa (*Karwinski*).

Fournier retains this as a distinct species; Sprengel (Syst. Veg. i. p. 264) reduces it to *L. lenticularis*, Michx., the most marked species, whilst Munro (MSS. in Steud. Gram. in Bibl. Kew) states that he believed it to be a variety of the very different *L. virginica*. The North-American botanists do not appear to have dealt with it.

Tribe IV. TRISTEGINEÆ.

Tristegineæ, Benth. et Hook. Gen. Plant. iii. pp. 1075 et 1080.

This tribe, like the last, is thinly scattered over Asia, Africa, America, and Australia, but it is apparently unrepresented in Europe; at least, as circumscribed in the 'Genera Plantarum.' In the 'Flora Australiensis' (vii. p. 546), and in a preliminary review of the Gramineæ (Journ. Linn. Soc. xix. p. 58), Bentham included in it the almost ubiquitous genus *Polypogon*, which he finally referred to the Agrostideæ. As now constituted the tribe comprises twelve genera, which, with the exception of *Arundinella* and *Garnotia*, contains only from one to three species each. Of the last-named genus about eight species are known.

24. ARUNDINELLA.

Arundinella, Raddi, Agrostogr. Bras. p. 36, t. 1. fig. 3; Benth. et Hook. Gen. Plant. iii. p. 1118.

There are about twenty-four species of this genus, widely diffused in the tropical regions, though most numerous in Asia. Fournier enumerates seven Mexican species, but we can only distinguish two, or at most three, among the specimens in the Kew Herbarium. Still the material is insufficient to decide how many species there are from our standpoint.

1. **Arundinella deppeana,** Nees in Bonplandia, 1855, p. 84, et in Seem. Bot. Voy. 'Herald,' p. 224, vix Fourn. Mex. Pl. Enum., Gram. p. 54.

Arundinella auletica, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 16, nil nisi nomen); Fourn. Mex. Pl. Enum., Gram. p. 54 (descriptio).

Arundinella latifolia et *A. scoparia,* Fourn. l. c. pp. 54 et 55.

Thysanachne scoparia, Presl, Symb. Bot. p. 12, t. 6. et Reliq. Hænk. i. p. 253.

South Mexico, Vera Cruz to Orizaba (*Müller*, 2129; *Botteri*), Mirador (*Liebmann*; *Linden*, 282), Cordillera of Vera Cruz at 3000 feet (*Galeotti*, 5679), valley of Cordova (*Bourgeau*, 1660, in part); Panama, near the city of Panama (*Seemann*, 228), Paraiso (*S. Hayes*, 608). Hb. Kew.

Döll (Mart. Fl. Bras. ii. 2, p. 229) refers *Arundinella auletica* and *Thysanachne scoparia* to *Arundinella martinicensis*, Trin., and he is probably right. Fournier refers the *A. martinicensis* of Grisebach, Cat. Cub. Pl. p. 234, to *A. auletica*; and *A. phragmitoides*, Griseb. l. c., is perhaps the same as *A. deppeana*, Nees.

2. **Arundinella pallida,** Nees, Agrostol. Bras. p. 465; Döll in Mart. Fl. Bras. ii. 2, p. 298, sub *A. brasiliensis* (t. 38); Fourn. Mex. Pl. Enum., Gram. p. 53.

Ischæmum pallidum, Kunth, Enum. Pl. i. p. 515.

South Mexico, Mirador and Huatusco (*Liebmann*); Panama (*Seemann*). Hb. Kew.

Arundinella robusta, Fourn. l. c., may be a luxuriant state of this species (*Bourgeau*, 1660, in part), and 2223 Bourgeau, as to the Kew specimen, is the same; yet Fournier refers it to *A. deppeana*. Fournier also refers some Mexican specimens collected by

Liebmann and Galeotti to *A. brasiliensis*, Raddi; and as Döll reduces *pallida* to *brasiliensis*, with the following observation concerning the plate—"ad *Arundinellæ pallidæ* Neesii specimen authenticum delineato"—it would seem that either there are very few really distinct American species, or there is great confusion of them in different works.

Tribe V. ZOYSEÆ.

Zoyseæ, Benth. et Hook. Gen. Plant. iii. pp. 1075 et 1080.

This is another small tribe, yet it is represented in America, Africa, Asia, and Australia, and also in Europe, though by only one species, *Tragus racemosa*, which has the same range as the whole tribe. Altogether there are thirteen genera, none of which numbers more than six species, and seven of them are monotypic.

25. HILARIA.

Hilaria, H. B. K. Nov. Gen. et Sp. i. p. 116, p. 37; Benth. et Hook. Gen. Plant. iii. p. 1121.

An exclusively American genus of about five or six species, ranging from California and Texas to South Mexico.

1. **Hilaria cenchroides**, H. B. K. Nov. Gen. et Sp. i. p. 117, t. 35; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 21); Benth. Pl. Hartw. p. 28; Nees in Linnæa, xix. p. 686; Peyr. in Linnæa, xxx. p. 3; Fourn. Mex. Pl. Enum., Gram. p. 72.
Anthephora belangeri, Steud. Gram. p. 111, ex Munro MSS.

Texas; New Mexico; Arizona.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Aguas Calientes (*Hartweg*, 251), Tacubaya (*Bourgeau*, 223; *Schaffner*, 673), Cordillera of Oaxaca 5000 to 7000 feet (*Galeotti*, 5754), Real del Monte (*Coulter*, 1638), Jalisco (*Beechey*). Hb. Kew.

[*Hexarrhena cenchroides*, Presl (Reliq. Hænk. i. p. 326, t. 45), is not in the Kew Herbarium; but in Bentham and Hooker's 'Genera Plantarum' it is reduced from the figure to *Hilaria*, whilst Fournier retains it as a distinct genus, identifying with it an imperfect specimen collected by Karwinski. As a species it is quite distinct from *Hilaria cenchroides*.]

26. ÆGOPOGON.

Ægopogon, Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 899; Benth. et Hook. Gen. Plant. iii. p. 1121; Fourn. Mex. Pl. Enum., Gram. p. 71.
Schellingia, Steud. in Flora, 1850, p. 231, t. 1.
Hymenothecium, Lag. Elench. Hort. Matr. Gen. et Sp. Nov. p. 4.

The genus is limited to two species, ranging from Mexico to Bolivia. Fournier describes several slight varieties of each species, which are not distinguished here; for he says himself:—"In eodem specimine (*Bourgeau*, 226) varietates plures apparent, *Æ. cenchroides genuinus*, *Æ. trisetus* et *Æ. multisetus*. Haud dubito quin *Æ. quinquesetus*, R. et S. Syst. Veg. ii. p. 805 (*Hymenothecium quinquesetum*, Lag.), calycis valvula

exteriore 5-aristata insignis, etiam inter varietates *Ægopogonis cenchroidis* recensendus sit."

1. **Ægopogon cenchroides,** H. B. K. in Willd. Sp. Pl. iv. p. 899; H. B. K. Nov. Gen. et Sp. i. p. 132, t. 42; Ch. et Schl. in Linnæa, vi. p. 36; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 6); Fourn. Mex. Pl. Enum., Gram. p. 72.

Ægopogon trisetus et *Æ. quinquesetus,* Rœm. et Schult. Syst. Veg. ii. p. 805.
Ægopogon setifer, Nees in Linnæa, xix. p. 691.
Ægopogon multisetus, Griseb. ex Fourn. l. c.
Hymenothecium trisetum et *H. quinquesetum,* Lag. Elench. Hort. Matr. Gen. et Sp. Nov. p. 4.
Cynosurus gracilis, Cav. H. R. M. i. t. 5. fig. 3, ex Lag.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 942), San Miguelito (*Schaffner*); South Mexico, Las Vegas, between Jalapa and Mexico (*Galeotti*, 5750), valley of Mexico (*Bourgeau*, 226), Real del Monte (*Coulter*, 1656), Zacuapan (*Liebmann*), Tacubaya (*Schaffner*), Vera Cruz to Orizaba (*Müller*, 2070); Guatemala, lower part of Volcan de Fuego (*Salvin & Godman*), without locality (*Bernoulli*, 130).—Colombia to Bolivia. Hb. Kew.

2. **Ægopogon geminiflorus,** H. B. K. Nov. Gen. et Sp. i. p. 133, t. 43; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 5); Nees in Seem. Bot. Voy. 'Herald,' p. 225; Fourn. Mex. Pl. Enum., Gram. p. 71.

Schellingia tenera, Steud. in Flora, 1850, p. 232, t. 1, et Syn. Gram. p. 214.
Ægopogon unisetus, Rœm. et Schult. Syst. Veg. ii. p. 805.
Hymenothecium unisetum et *H. tenellum,* Lag. Elench. Hort. Matr. Gen. et Sp. Nov. p. 4.
Cynosurus tenellus, Cav. H. R. M. i. t. 5. fig. 2, ex Lag.

South Mexico, around Tacubaya (*Schaffner*, 689), San Nicolas, near Mexico (*Bourgeau*, 1027), near Orizaba (*Bourgeau*, 750), without locality (*Graham; Parkinson*); Panama, Boquete, Veraguas (*Seemann*, 1561).—Colombia. Hb. Kew.

27. CATHESTECUM.

Cathestecum, Presl, Reliq. Hænk. i. p. 294, t. 42; Benth. et Hook. Gen. Plant. iii. p. 1122 (errore *Cathestechum*).

The genus, as far as known, is restricted to the Texano-Mexican region, and only two species have been described.

1. **Cathestecum erectum,** Vasey et Hackel in Bull. Torr. Bot. Club, xi. p. 37, t. 45.

Texas.—North Mexico, Sonora (*Palmer*).

2. **Cathestecum prostratum,** Presl, Reliq. Hænk. i. p. 295, t. 42; Fourn. Mex. Pl. Enum., Gram. p. 133.

Mexico, without locality (*Hænke; Schaffner*).

28. ANTHEPHORA.

Anthephora, Schreb. Beschr. Gräs. ii. p. 105, t. 44; Benth. et Hook. Gen. Plant. iii. p. 1122.

Besides the following, there are four species of this genus in Tropical and South Africa.

1. **Anthephora elegans,** Schreb. Beschr. Gräs. ii. p. 105, t. 44; H. B. K. Nov. Gen. et Sp. i. p. 116; Griseb. Fl. Brit. W. Ind. p. 556; Fourn. Mex. Pl. Enum., Gram. p. 51.

Cenchrus lævigatus, Trin. Diss. ii. p. 74.

South Mexico, Acapulco (*Thiebaut*), San Augustin, Pochutla, &c. (*Liebmann*), Vera Cruz (*Gouin*), Volcan de Jorullo (*Humboldt & Bonpland*); Nicaragua, near Granada (*Lévy*, 239), Greytown (*Tate*, 80).—Colombia to Peru and Brazil and in the West Indies. Hb. Kew.

29. TRAGUS.

Tragus, Hall, Stirp. Helv. ii. p. 203; Benth. et Hook. Gen. Plant. iii. p. 1122.
Lappago, Schreb. Gen. Plant. p. 55.

A monotypic genus.

1. **Tragus racemosus,** Hall, Stirp. Helv. ii. p. 203; Döll in Mart. Fl. Bras. ii. 2, p. 122, t. 18.

Lappago racemosa, Willd. Sp. Pl. i. p. 484; Kunth, Enum. Pl. i. p. 170, et Revis. Gram. t. 120; H. B. K. Nov. Gen. et Sp. i. p. 119; Benth. Pl. Hartw. p. 28.

Tragus occidentalis, Nees, Agrostol. Bras. p. 286, et in Linnæa, xix. p. 688; Fourn. Mex. Pl. Enum., Gram. p. 4.

Lappago aliena, Spreng. Neue Entdeck. iii. p. 15; Griseb. Fl. Brit. W. Ind. p. 557.

New Mexico; Texas.—North Mexico, region of San Luis Potosi (*Parry & Palmer*); South Mexico, Aguas Calientes (*Hartweg*, 253), Orizaba (*Botteri*), Guadalupe, valley of Mexico (*Bourgeau*, 668), near Guanajuato (*Humboldt & Bonpland*).—South America and West Indies, and very widely diffused in hot and temperate regions of the Old World. Hb. Kew.

30. SCHAFFNERA.

Schaffnera, Benth. in Hook. Ic. Pl. xiv. p. 59, t. 1378; Benth. et Hook. Gen. Plant. iii. p. 1124.

A monotype.

1. **Schaffnera gracilis,** Benth. in Hook. Ic. Pl. xiv. p. 59, t. 1378.

North Mexico, mountains of San Miguelito, San Luis Potosi (*Schaffner*, 1070). Hb. Kew.

Tribe VI. ANDROPOGONEÆ.

Andropogoneæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1081.

This tribe is generally diffused in the tropics, and a few species extend into temperate regions. There are sixteen genera and about 320 species, 100 of which belong to *Andropogon* itself, as limited by Bentham and Hooker.

31. IMPERATA.

Imperata, Cyr. Pl. Rar. Ic. ii. p. 26, t. 11, fide Parlat. Fl. Ital. i. p. 136; Benth. et Hook. Gen. Plant. iii. p. 1125.
Syllepis, Fourn. Mex. Pl. Enum., Gram. p. 52.

Three or four species widely dispersed in the tropical and subtropical regions of both hemispheres, and in the Old World extending into temperate regions in South Europe, China, and Japan.

1. **Imperata brasiliensis,** Trin. in Mém. Acad. Pétersb. sér. 6, ii. p. 331, ex Hack. in Mart. Fl. Bras. ii. 3, p. 251, t. 59.
Imperata brasiliensis, var. *mexicana,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 19).
Syllepis ruprechtii, Fourn. Mex. Pl. Enum., Gram. p. 52.
Imperata arundinacea, var. *americana,* Anderss. in Œfvers. af Kongl. Vetensk.-Akad. Förh. 1855, p. 160, fide Fourn.

South Mexico, meadows around Zacuapan (*Galeotti,* 5678).—Southward to Brazil. Hb. Kew.

This is hardly more than a variety of *I. arundinacea,* Cyr., which is very widely spread in the temperate and tropical regions of the Old World, including Australia.

2. **Imperata caudata,** Trin. in Mém. Acad. Pétersb. sér. 6, ii. p. 331, ex Hack. in Mart. Fl. Bras. ii. 3, p. 251; Griseb. Fl. Brit. W. Ind. p. 561.
Saccharum contractum et *S. dubium,* H. B. K. Nov. Gen. et Sp. i. pp. 182 et 183.
Syllepis polystachya, Fourn. Mex. Pl. Enum., Gram. p. 52, excl. syn. Swartz.

South Mexico, Vera Cruz (*Gouin*); Panama, Empire Station (*S. Hayes,* 257).—Southward to Brazil and in the West Indies. Hb. Kew.

It is singular that Fournier reduces, with the sign of certainty, *Saccharum polystachyum,* Swartz, to his genus *Syllepis,* founded on species of *Imperata,* while Döll, Kunth, Grisebach, and others regard it undoubtingly as the same as *Paspalum saccharoides.*

32. SACCHARUM.

Saccharum, Linn. Gen. Plant. n. 73; Benth. et Hook. Gen. Plant. iii. p. 1125.

A genus of about a dozen species, some of them very closely allied to each other, natives of tropical and subtropical regions in the Old World, one of which has long been cultivated in America; and one American species.

1. **Saccharum cayennensis,** Benth. in Journ. Linn. Soc. xix. p. 66; Hack. in Mart. Fl. Bras. ii. 3, p. 253.
Eriochrysis cayennensis, Beauv. Agrostogr. p. 8, t. 4. fig. 11; H. B. K. Nov. Gen. Sp. i. p. 183; Griseb. Fl. Brit. W. Ind. p. 560; Fourn. Mex. Pl. Enum., Gram. p. 51.

South Mexico, Orizaba (*Botteri*), Mexico? (*Liebmann*).—Colombia and Venezuela to Guiana and Brazil, and in Trinidad. Hb. Kew.

2. **Saccharum officinarum,** Linn. Sp. Pl. ed. 1, p. 54; Ch. et Schl. in Linnæa, vi. p. 39; Griseb. Fl. Brit. W. Ind. p. 561; Fourn. Mex. Pl. Enum., Gram. p. 52.

Naturalized in various parts of Mexico and Central America.

[*Saccharum mexicanum*, Brouss. in Hornem. Hort. Hafn. i. p. 75, ex Kunth, Enum. Pl. i. p. 476; Steud. Gram. p. 407, is a doubtful plant.]

33. ERIANTHUS.

Erianthus, Michx. Fl. Bor.-Amer. i. p. 54; Benth. et Hook. Gen. Plant. iii. p. 1126.

About a dozen species inhabiting the warmer parts of both hemispheres, and extending to the south of Europe, China, Japan, and the Southern States of North America.

1. **Erianthus saccharoides,** Michx. Fl. Bor.-Am. i. p. 55; Hack. in Mart. Fl. Bras. ii. 3, p. 257 (varietates plures).

Andropogon alopecuroides, Linn. Sp. Pl. ed. 1, p. 1045, excl. syn. *Sloanei*, ex Hack.
Anthoxanthum giganteum, Walt. Fl. Carol. p. 65.
Erianthus alopecuroides et *E. contortus*, Elliott, Sketch, pp. 38 et 40; Chapm. Fl. Southern U. S. p. 582.
Erianthus brevibarbis, Michx. Fl. Bor.-Am. i. p. 55.
Saccharum giganteum, Pers. Syn. Pl. i. p. 103.
Andropogon erianthus, Link, Hort. Berol. i. p. 243.
Spodiopogon foliatus, Fourn. Mex. Pl. Enum., Gram. p. 52.
Spodiopogon vaginatus, Fourn. l. c. p. 53?

Carolina to Florida.—South Mexico, Borrego, near Orizaba and Santa Fé, in the valley of Mexico (*Bourgeau*, 674, 2970), without locality (*Karwinski*).—Colombia to Brazil. Hb. Kew.

34. ELIONURUS.

Elionurus, Humb. et Bonpl. in Willd. Sp. Pl. iv. p. 941; Benth. et Hook. iii. p. 1129.

Of this genus, again, there are about a dozen species, the greater part of which inhabit Tropical America and Tropical and South Africa; one occurs in the Levant and one in Tropical Australia.

1. **Elionurus ciliaris,** H. B. K. Nov. Gen. et Sp. i. p. 193, t. 63; Kunth, Enum. Pl. i. p. 480; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 18); Fourn. Mex. Pl. Enum., Gram. p. 66.

Texas; New Mexico.—South Mexico, Orizaba (*Botteri*, 1264; *Schaffner*; *Bourgeau*, 2844), Mirador, Vera Cruz (*Linden*, 277), Zacuapan &c., Vera Cruz (*Galeotti*, 5696).—Colombia; Venezuela. Hb. Kew.

Hackel (Mart. Fl. Bras. ii. 3, p. 306) regards the Brazilian grass that has been referred to this as a distinct species—*E. candidus*, Hack. Whether the specimens here referred to *E. ciliaris* and *E. tripsacoides*, H. B. K., are really such, we are unable to decide; but we have partly followed Fournier and partly the named specimens in the Kew Herbarium.

2. **Elionurus tripsacoides,** H. B. K. Nov. Gen. et Sp. i. p. 192, t. 62; Kunth, Enum. Pl. i. p. 480; Ch. et Schl. in Linnæa, vi. p. 40; Fourn. Mex. Pl. Enum., Gram. p. 67.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Jalapa (*Schiede & Deppe*).—COLOMBIA; VENEZUELA.

35. RÓTTBOELLIA.

Rottboellia, Linn. f. Nov. Gram. Gen. in Amœn. Acad. x. p. 22, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1129.

About eighteen species widely spread in the warmer regions.

1. **Rottboellia glabrata,** Benth. in Journ. Linn. Soc. xix. p. 69.

Apogonia glabrata, Fourn. Mex. Pl. Enum., Gram. p. 63.

SOUTH MEXICO, Orizaba (*Bourgeau*, 2757; *Schaffner*; *Müller*, 2088), Mirador and Cordova (*Schaffner*).—MARTINIQUE. Hb. Kew.

2. **Rottboellia ramosa,** Benth. in Journ. Linn. Soc. xix. p. 69.

Apogonia ramosa, Fourn. Mex. Pl. Enum., Gram. p. 63.

SOUTH MEXICO, Rio Blanco (*Bourgeau*, 2647), Orizaba (*Botteri*), Mirador (*Schaffner*), Hb. Kew.

Fournier also records this from the United States, and there are specimens in the Kew Herbarium of what may be the same species from Trinidad.

[*Rottboellia stigmosa,* Trinius ex Rupr. in Bull. Acad. Brux. ix. (reprint, p. 17), from Zacuapan and Mirador (*Galeotti*, 5801) is unknown to us.]

36. MANISURIS.

Manisuris, Linn. Mant. p. 164. n. 1334; Benth. et Hook. Gen. Plant. iii. p. 1130.

A monotypic genus.

1. **Manisuris granularis,** Swartz, Prodr. p. 25; Döll in Mart. Fl. Bras. ii. 2, p. 330, t. 46; Griseb. Fl. Brit. W. Ind. p. 557; Fourn. Mex. Pl. Enum., Gram. p. 67.

SOUTH-EASTERN NORTH AMERICA, MEXICO, and CENTRAL AMERICA, and very widely diffused in the WARMER REGIONS of both hemispheres, though it appears to be rare in Australia, being only recorded from two or three localities in Queensland and North Australia.

37. HEMARTHRIA.

Hemarthria, R. Br. Prodr. Fl. Nov. Holl. p. 207; Benth. et Hook. Gen. Plant. iii. p. 1131.

Bentham and Hooker say there are scarcely three distinct species, which are widely spread in the warmer parts of the Old World, especially in maritime districts, extending to the Mediterranean region; rarer in America.

1. **Hemarthria fasciculata,** Kunth, Revis. Gram. i. p. 153; Hack. in Mart. Fl. Bras. ii. 3, p. 314, t. 72. fig. 2; Fourn. Mex. Pl. Enum., Gram. p. 67.

South Mexico, Vera Cruz (*Gouin*), Orizaba (*Botteri; Schaffner*).—Brazil. Also a native of Africa, South Europe, and some parts of Asia, and very closely allied to the Australian *Hemarthria compressa*, R. Br. We have seen no Mexican specimens.

38. ISCHÆMUM.

Ischæmum, Linn. Gen. Plant. n. 1148; Benth. et Hook. Gen. Plant. iii. p. 1132.

A genus of about thirty species very widely diffused in the warmer regions of both hemispheres.

1. **Ischæmum latifolium,** Kunth, Revis. Gram. i. p. 371, t. 99; Hack. in Mart. Fl. Bras. ii. 3, p. 261; Fourn. Mex. Pl. Enum., Gram. p. 55.

Andropogon latifolius, Spreng. Syst. Veg. i. p. 286; Steud. Gram. p. 382.

Spodiopogon latifolius, Nees, Agrostol. Bras. p. 360.

Ischæmopogon latifolius, Griseb. Fl. Brit. W. Ind. p. 560.

South Mexico, Orizaba (*Bourgeau*, 3136; *Botteri*), Oaxaca (*Galeotti*, 5861), Misantla (*Schiede & Deppe*), Cordova (*Bourgeau*, 2203); Nicaragua, Greytown (*Tate*, 555).—Ecuador; Peru; Brazil, and the West Indies. Hb. Kew.

39. TRACHYPOGON.

Trachypogon, Nees, Agrostol. Bras. p. 341, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1133.

Concerning this genus, Bentham and Hooker observe:—"Species 11 enumerat Andersson in Œfvers. K. Vet.-Akad. Stockh. 1857, p. 46, quarum una Africæ australis, cæteræ Americæ tropicæ et subtropicæ a Brasilia usque ad Mexicum incolæ; plures tamen vix inter se distinguendæ et a Hackelio (in litt.) omnes in unam junguntur." Subsequently Hackel (in Mart. Fl. Bras. ii. 3, p. 263) actually united all the Brazilian forms at least under the name of *Trachypogon polymorphus*, distinguishing, however, five primary and numerous secondary varieties. In this sense the species includes *T. canescens*, Nees, *T. montufari*, Nees, *T. dactyloides*, Fourn., and *T. angustifolius*, Fourn., and probably also *T. mülleri*, Fourn., *T. gouini*, Fourn., and *T. dissolutus*, Nees, though these names are not actually cited as synonyms. We have not critically examined the specimens, but all the Mexican and Central American that we have seen may well belong to one species; indeed they present no obvious distinctions. Nevertheless, as we have not seen Fournier's types, and as his names are already published, we prefer following him in this place.

1. **Trachypogon angustifolius,** Fourn. Mex. Pl. Enum., Gram. p. 66.

Andropogon angustifolius, H. B. K. Nov. Gen. et Sp. i. p. 184; Kunth, Enum. Pl. i. p. 4.

Trachypogon polmorphus, var. δ. *montufari,* subvar. 4, Hack. in Mart. Fl. Bras. ii. 2, p. 265.

South Mexico, Santa Rosa et Los Joares at 8040 feet (*Humboldt & Bonpland*).

2. **Trachypogon canescens,** Nees, Agrostol. Bras. p. 343; Fourn. Mex. Pl. Enum., Gram. p. 65.

Trachypogon montufari, var. *hirsutus,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 18), non Nees ex Fourn.

Andropogon canescens, Kunth, Enum. Pl. i. p. 487.

Trachypogon polymorphus, var. *a. canescens,* Hack. in Mart. Fl. Bras. ii. 3, p. 263.

South Mexico, on rocks near Juquila in the cordillera of Oaxaca (*Galeotti*, 5732); Nicaragua (*Lévy*).—Brazil.

3. **Trachypogon dactyloides,** Fourn. Mex. Pl. Enum., Gram. p. 66.

Andropogon dactyloides, Steud. Gram. p. 381.

Andropogon digitatus, Hochst. in Hostm. et Kappler, Pl. Surin. n. 1028.

South Mexico, Hacienda del Señor Posado, near Orizaba (*Schaffner*).—Surinam.

4. **Trachypogon dissolutus,** Nees in Linnæa, xix. p. 695; Walp. Ann. vi. p. 1070; Fourn. Mex. Pl. Enum., Gram. p. 66.

Andropogon dissolutus, Steud. Gram. p. 381.

South Mexico, Orizaba (*Müller*, 2085; *Schaffner*), without locality (*Aschenborn*).

5. **Trachypogon gouini,** Fourn. Mex. Pl. Enum., Gram. p. 66.

South Mexico, Vera Cruz (*Gouin*).

6. **Trachypogon montufari,** Nees, Agrostol. Bras. p. 342; Fourn. Mex. Pl. Enum., Gram. p. 65; S. Wats. in Proc. Am. Acad. xviii. p. 173; Nees in Seem. Bot. Voy. 'Herald,' p. 224.

Andropogon montufari, H. B. K. Nov. Gen. et Sp. i. p. 184; Ch. et Schl. in Linnæa, vi. p. 39; Kunth, Enum. Pl. i. p. 486.

Heteropogon secundus (non Willd.) et *H. stipoides,* Presl, Reliq. Hænk. i. p. 335.

Andropogon secundus et *A. stipoides,* Kunth, Enum. Pl. i. p. 487.

Trachypogon preslei, Anderss. Walp. Ann. vi. p. 1069.

Trachypogon polymorphus, var. δ. *montufari,* Hack. in Mart. Fl. Bras. ii. 3, p. 264.

Texas; New Mexico.—North Mexico, region of San Luis Potosi (*Parry & Palmer*, 964; *Schaffner*, 1063); South Mexico, region of Orizaba (*Bourgeau*, 3133, 3358), near Jalapa (*Schiede & Deppe*); Panama, Nata (*Seemann*, 133).—Colombia; Ecuador; Brazil, southward to Uruguay. Hb. Kew.

Var. β. **mollis,** Fourn. Mex. Pl. Enum., Gram. p. 65.

Trachypogon mollis, Nees, Agrostol. Bras. p. 343 (species).

Andropogon mollis, Kunth, Revis. Gram. ii. p. 561, t. 195.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

Var. γ. **pilosus,** Fourn. l. c. p. 66.

South Mexico (*Botteri*, 1260).

7. **Trachypogon mülleri,** Fourn. Mex. Pl. Enum., Gram. p. 66.

South Mexico, Orizaba (*Müller*, 2085).

All that Fournier says concerning this is:—"Differt a *T. montufari* ligula longiore 3″ longa, arista validiore torta bis geniculata."

40. HETEROPOGON.

Heteropogon, Pers. Syn. Pl. ii. p. 533; Benth. et Hook. Gen. Plant. iii. p. 1133.

About half a dozen species in the warmer regions of Europe, Asia, Africa, and Australia; two of the Old-World species recurring in America.

1. **Heteropogon acuminatus,** Trin. in Mém. Acad. Sc. St. Pétersb. sér. 6, ii. 1833, p. 254, ex Hack. in Mart. Fl. Bras. ii. 3, p. 268.
Heteropogon scrobiculatus, Fourn. Mex. Pl. Enum., Gram. p. 64.
Andropogon melanocarpus, Elliott, Sketch, i. p. 146; Chapm. Fl. Southern U. S. p. 582.
Cymbopogon melanocarpus, Spreng. Syst. Veg. i. p. 289.
Trachypogon scrobiculatus, Nees, Agrostol. Bras. p. 347.
Andropogon scrobiculatus, Kunth, Enum. Pl. i. p. 507; Steud. Gram. p. 381.

FLORIDA; GEORGIA.—SOUTH MEXICO, Orizaba (*Müller*, 2086; *Schaffner*).—COLOMBIA to PERU and BRAZIL.

This species is also recorded from the East Indies.

2. **Heteropogon contortus,** Rœm. et Schult. Syst. Veg. ii. p. 836; Nees in Linnæa, vii. p. 284, et xix. p. 695; Presl, Reliq. Hænk. i. p. 334; Fourn. Mex. Pl. Enum., Gram. p. 64; Hack. in Mart. Fl. Bras. ii. 3, p. 267.
Andropogon contortus, Linn. Sp. Pl. p. 1480; Kunth, Enum. Pl. 486; Benth. Pl. Hartw. p. 28.
Andropogon allionii, DC. Fl. Franc. iii. p. 97; H. B. K. Nov. Gen. et Sp. i. p. 185.
Heteropogon hirtus et *H. glaber*, Pers. Syn. Pl. ii. p. 533.

This species covers nearly the whole area of the genus, and is apparently common in MEXICO and CENTRAL AMERICA. It is found in the Southern States of North America, as well as the West Indies and South America. Hb. Kew.

3. **Heteropogon firmus,** Presl, Reliq. Hænk. i. p. 334; Fourn. Mex. Pl. Enum., Gram. p. 65.
Andropogon firmus, Kunth, Enum. Pl. i. p. 486.

MEXICO (*Hœnke*).

This is probably nothing more than *H. contortus.*

41. ANDROPOGON.

Andropogon, Linn. Gen. Plant. n. 1145; Benth. et Hook. Gen. Plant. iii. p. 1133.

Bentham and Hooker estimate the number of distinct species of this genus at barely 100, though many more forms have been described as species. They are generally diffused in the warmer regions, and a few reach the south of Europe, temperate Eastern Asia, and North America. Fournier has described a considerable number of proposed new Mexican species, of which we have seen no authentic specimens, therefore they are here retained on his sole authority.

1. **Andropogon albescens,** Fourn. Mex. Pl. Enum., Gram. p. 56.

"Differt ab *Andropogone avenaceo* villis pedicelli longis argenteis. Ceterum flores conferti."

SOUTH MEXICO, Vera Cruz (*Gouin*).

This is apparently a mere form of *Chrysopogon avenaceus*.

2. **Andropogon attenuatus,** Bertol. Misc. Bot. xx. p. 10, t. 2.

GUATEMALA (*Velasquez*).

3. **Andropogon apricus,** Trin. Suppl. in Mém. Acad. St. Pétersb. 1836, p. 83, ex Hack. in Mart. Fl. Bras. ii. 3, p. 302.

Diectomis laxa, Nees, Agrostol. Bras. p. 340.
Diectomis angustatus, Presl, Reliq. Hænk. i. p. 333; Kunth, Enum. Pl. i. p. 511.
Andropogon angustatus, Steud. Gram. p. 370.

MEXICO (*Hænke; Liebmann*).—COLOMBIA; VENEZUELA; BRAZIL. Hb. Kew.

4. **Andropogon argenteus,** DC. Cat. Hort. Monsp. p. 77, non Kunth, nec Elliott, nec Curtis, nec Em. Desv. ex Fourn. Mex. Pl. Enum., Gram. p. 58.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

Fournier fully describes the North-Mexican form, which he regards as identical with DeCandolle's original *argenteus*, and as constituting a species distinct from that ordinarily accepted as *A. argenteus*, and he also points out the distinguishing characteristics of the forms named *argenteus* by Kunth, Desveaux, and others. On the other hand, Hackel (Mart. Fl. Bras. ii. 3, p. 292) treats the *argenteus* of all the authors named, including Fournier, as one of the numerous varieties of the *A. saccharoides*, Swartz.

5. **Andropogon bicornis,** Linn. Sp. Pl. ed. 1, p. 1046; Kunth, Enum. Pl. i. p. 494; Fourn. Mex. Pl. Enum., Gram. p. 60; Hack. in Mart. Fl. Bras. ii. 3, p. 283.

Anatherum bicorne, Beauv. Agrostogr. pp. 128 et 150, t. 22. fig. 11; Griseb. Fl. Brit. W. Ind. p. 559.

SOUTH MEXICO, Jocotepec (*Hartweg*, 521), Amatlan in the valley of Cordova (*Bourgeau*, 2224), Orizaba (*Botteri*); GUATEMALA, San Gerónimo (*Salvin & Godman*); NICARAGUA, Greytown (*Tate*, 84); PANAMA, summit of the Panama railroad (*S. Hayes*, 105).—COLOMBIA to PERU, GUIANA, and BRAZIL, and in the WEST INDIES. Hb. Kew.

6. **Andropogon bourgæi,** Hack. in Flora, 1885, p. 134.

SOUTH MEXICO, Orizaba (*Bourgeau*, 2645; *Müller*, 1393), Mirador (*Liebmann*, 505 *Sartorius*).

We have seen none of the numbers cited by Hackel.

7. **Andropogon bracteatus,** Humb. et Bonpl. ex Willd. Sp. Pl. iv. p. 914; Hack. in Mart. Fl. Bras. ii. 3. p. 279, t. 64.

Anthistiria reflexa et *A. foliosa,* H. B. K. Nov. Gen. et Sp. i. p. 191; Ch. et Schl. in Linnæa, vi. p. 40.

Cymbopogon humboldtii, Spreng. Syst. Veg. i. p. 289.

Cymbopogon reflexus et *C. foliosus*, Rœm. et Schult. Syst. Veg. ii. pp. 834, 835.
Anthistiria humboldtii, Nees, Agrostol. Bras. p. 369, et in Seem. Bot. Voy. 'Herald,' p. 224.
Hyparrhenia foliosa, Fourn. Mex. Pl. Enum., Gram. p. 67.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), region of Orizaba (*Bourgeau*, 3270); Panama (*Seemann*, 1562).—Colombia to Peru; Brazil. Hb. Kew.

8. **Andropogon brevifolius**, Swartz, Fl. Ind. Occ. i. p. 209; Kunth, Revis. Gram. ii. p. 563, t. 196, et Enum. Pl. i. p. 488; Griseb. Fl. Brit. W. Ind. p. 558; Hack. in Mart. Fl. Bras. ii. 3, p. 302.

Andropogon obtusifolius, Poir. Encycl., Suppl. i. p. 583.
Andropogon tenellus, Presl, Reliq. Hænk. i. p. 335.
Andropogon debilis, Kunth, Enum. Pl. i. p. 488; Fourn. Mex. Pl. Enum., Gram. p. 61.
Andropogon floridus, Trin. in Mém. Acad. St. Pétersb. 1833, p. 265; Steud. Gram. p. 366.
Schizachyrium brevifolium, Nees, Agrostol. Bras. p. 332.

South Mexico, Orizaba (*Müller*, 2004, 2075; *Schaffner*), Oaxaca (*Liebmann*).—Colombia; Venezuela; Brazil; West Indies; Tropical Africa; Tropical Asia. Hb. Kew.

9. **Andropogon cirratus**, Hack. in Flora, 1885, p. 119.

Texas; New Mexico.—North Mexico, Silver City, southern New Mexico (*Greene*).

10. **Andropogon condensatus**, H. B. K. Nov. Gen. et Sp. i. p. 188; Ch. et Schl. in Linnæa, vi. p. 39; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 18); Fourn. Mex. Pl. Enum., Gram. p. 60; Hack. in Mart. Fl. Bras. ii. 3, p. 296; Griseb. Fl. Brit. W. Ind. p. 558.

Schizachyrium condensatum, Nees, Agrostol. Bras. p. 333.
Cymbopogon condensatus, Spreng. Syst. Veg. i. p. 289.
Andropogon scoparius, Presl, Reliq. Hænk. i. p. 338, ex Fourn. et Hack.
Andropogon densus, Desv. in Ham. Prodr. p. 8, ex Fourn.
Andropogon paniculatus, Kunth, Enum. Pl. i. p. 494; Steud. Gram. p. 391.
Andropogon lhotzkyi, Steud. Gram. p. 384; Fourn. Mex. Pl. Enum., Gram. p. 61, ex Hackel.

South Mexico, Jalapa (*Schiede & Deppe*), Mirador, Zacuapan (*Galeotti*, 5711), near Orizaba (*Bourgeau*, 2646); Guatemala, Volcan de Agua (*Godman & Salvin*, 334); Panama, Boquete, Veraguas (*Seemann*, 1563).—Colombia to Peru, Guiana, and Brazil, and in the West Indies. Hb. Kew.

11. **Andropogon diatherus**, Steud. Gram. p. 378; Fourn. Mex. Pl. Enum., Gram. p. 57.

South Mexico, Oaxaca (ex *Steudel*).
Fournier did not find this in the Steudel Herbarium.

12. **Andropogon elythrophyllus**, Steud. Gram. p. 378; Fourn. Mex. Pl. Enum., Gram. p. 57.

South Mexico, "between Horcanila and Mount Bernal" (*Karwinski*).

Fournier expresses a doubt whether Karwinski's plant is really of the species described by Steudel.

13. **Andropogon emersus,** Fourn. Mex. Pl. Enum., Gram. p. 58.
South Mexico, Orizaba (*Müller*, 2033).

14. **Andropogon feensis,** Fourn. Mex. Pl. Enum., Gram. p. 62, cum var. β.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Weber*; *Müller*, 2088; *Schaffner*), Santa Fé, in the valley of Mexico (*Bourgeau*, 752). Hb. Kew.

15. **Andropogon galeottii,** Fourn. Mex. Pl. Enum., Gram. p. 56.
Andropogon stipoides, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 19), ex Fournier.
South Mexico, Mirador and Zacuapan (*Galeotti*, 5685, 5698), Zoquitlan (*Bourgeau*, 3269).
This is probably *Chrysopogon*, as that genus is limited in Bentham and Hooker's 'Genera Plantarum.'

16. **Andropogon glaucescens,** H. B. K. Nov. Gen. et Sp. i. p. 186; Nees, Agrostol. Bras. p. 327; Ch. et Schl. in Linnæa, vi. p. 39; Hack. in Mart. Fl. Bras. ii. 3, p. 288; Fourn. Mex. Pl. Enum., Gram. p. 60.
South Mexico, Mirador (*Schaffner*), Orizaba (*Müller*, 1393, in part), Rio Blanco, Orizaba (*Bourgeau*, 2645), Jalapa (*Schiede & Deppe*), Cordova (*Schaffner*).—Ecuador, and Brazil to Uruguay. Hb. Kew.

17. **Andropogon hirsutus,** H. B. K. Nov. Gen. et Sp. i. p. 186; Kunth, Enum. Pl. i. p. 497; Steud. Gram. p. 378; Fourn. Mex. Pl. Enum., Gram. p. 57.
South Mexico, Valladolid (*Humboldt & Bonpland*).

18. **Andropogon hirtifolius,** Presl, Reliq. Hænk. i. p. 328; Kunth, Enum. Pl. i. p. 497.
Mexico (*Hænke*).

19. **Andropogon laguroides,** DC. Cat. Hort. Monsp. p. 78; Lagasca, Nov. Gen. et Sp. p. 3; Kunth, Enum. Pl. i. p. 500, et Suppl. p. 411; Fourn. Mex. Pl. Enum., Gram. p. 58.
Trachypogon laguroides, Nees, Agrostol. Bras. p. 349.
Andropogon species, Andr. argenteo subsimilis, Ch. et Schl. in Linnæa, vi. p. 40.
Andropogon saccharoides, Swartz, var. δ. *laguroides,* Hack. in Mart. Fl. Bras. ii. 3, p. 293.
South Mexico, Macultepec (*Schiede & Deppe*), Borrego, near Orizaba (*Bourgeau*, 2969), Tacubaya (*Schaffner*), Regla at 6000 feet (*Galeotti*, 5816). Hb. Kew.
The range of this species, as limited by Fournier, we are unable to define; but *A. saccharoides*, Swartz, as extended by Hackel is spread all over the warmer parts of America, from the South-eastern States of North America southward to the Argentine

Republic. In North America it is found as far westward as Arizona, but it is not known from California; and it is noteworthy that Watson ('Botany of California') records only one member of the Andropogoneæ, namely *Ischæmum leersioides*, Munro, a native of Southern China, and "evidently introduced in California." See *A. argenteus*.

20. **Andropogon leucopogon,** Nees in Linnæa, xix. p. 694; Fourn. Mex. Pl. Enum., Gram. p. 58, varietates α et β.

Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, without locality (*Aschenborn*), Tampico (*herb. Uzac*), region of Orizaba (*Bourgeau*, 2374 bis).

21. **Andropogon liebmanni,** Hack. in Flora, 1885, p. 132.

South Mexico, Chinantla (*Liebmann*), region of Orizaba (*Bourgeau*, 2376; *Müller*, 2034). Hb. Kew.

Fournier (Mex. Pl. Enum., Gram. p. 60) refers Bourgeau's number 2376 to *Andropogon macrothrix*, Trin.

22. **Andropogon lolioides,** Fourn. Mex. Pl. Enum., Gram. p. 62.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

23. **Andropogon macrothrix,** Trin. in Mém. Acad. St. Pétersb. sér. 6, ii. 1833, p. 270; Fourn. Mex. Pl. Enum., Gram. p. 60.

South Mexico, Orizaba (*Schaffner*), Izhuatlancillo (*Bourgeau*, 2376).—Brazil.

Hackel (in Mart. Fl. Bras. ii. 3, p. 287) treats *A. macrothrix*, Trin., as a subspecies of *A. ternatus*, Nees, and Bourgeau's number 2376 he refers to his newly-founded *A. liebmannii*. Possibly two species were distributed under the number in question.

24. **Andropogon macrourus,** Michx. Fl. Bor.-Am. i. p. 56; Chapm. Fl. Southern U. S. p. 582; Fourn. Mex. Pl. Enum., Gram. p. 60.

Anatherum macrurum, Griseb. Fl. Brit. W. Ind. p. 559.

New York to Florida and Texas.—South Mexico, Orizaba (*Bourgeau*, 2374, in part; *Botteri*; *Schaffner*), Cordova (*Bourgeau*, 1660 bis), Vera Cruz (*Gouin*).—West Indies. Hb. Kew.

25. **Andropogon malacostachyus,** Presl, Reliq. Hænk. i. p. 337; Fourn. Mex. Pl. Enum., Gram. p. 62.

South Mexico, Acapulco (*Hænke*), Orizaba (*Schaffner*), Tacubaya (*Schaffner*), Jorullo (*Bonpland*).

26. **Andropogon myosurus,** Presl, Reliq. Hænk. i. p. 337; Kunth, Revis. Gram. t. 199; Hack. in Mart. Fl. Bras. ii. 3, p. 300; Fourn. Mex. Pl. Enum., Gram. p. 62.

Schizachyrium myosurus, Nees in Linnæa, xix. p. 695.

Andropogon hirtiflorus, Kunth, Revis. Gram. p. 569, t. 198.

Schizachyrium hirtiflorum, Nees, Agrostol. Bras. p. 334.

South Mexico (*Aschenborn*; *Liebmann*).—Ecuador; Peru; Bolivia; Brazil; Paraguay.

27. **Andropogon perforatus,** Trin. ex Fourn. Mex. Pl. Enum., Gram. p. 59.
SOUTH MEXICO, near Guadalupe (*Schaffner*), region of Orizaba (*Bourgeau*, 2374 in part), between Victoria and Rio Blanco (*Karwinski*).

28. **Andropogon pubiflorus,** Fourn. Mex. Pl. Enum., Gram. p. 57.
SOUTH MEXICO, Orizaba (*Schaffner*; *Müller*, 2059).

29. **Andropogon rectirhachis,** Fourn. Mex. Pl. Enum., Gram. p. 61.
SOUTH MEXICO, Mirador (*Schaffner*), Orizaba (*Weber*; *Schaffner*; *Müller*, 2032; *Bourgeau*, 2646 bis). Hb. Kew.

30. **Andropogon ruprechtii,** Hack. in Flora, 1885, p. 126.
Hyparrhenia ruprechtii, Fourn. Mex. Pl. Enum., Gram. p. 67.
Andropogon anthistirioides, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 19), non Hochst.
SOUTH MEXICO, Cordillera of Vera Cruz, savannas at 3000 feet (*Galeotti*, 5697). Hb. Kew.

Munro identified this with a West-African species to which he gave a manuscript name in the Kew Herbarium.

31. **Andropogon schaffneri,** Griseb. ex Fourn. Mex. Pl. Enum., Gram. p. 57.
SOUTH MEXICO, Tacubaya (*Schaffner*).

32. **Andropogon schlumbergerii,** Fourn. Mex. Pl. Enum., Gram. p. 59.
SOUTH MEXICO, Orizaba (*Botteri*; *Thomas*; *Müller*, 2016).

33. **Andropogon scoparius,** Michx. Fl. Bor.-Am. i. p. 57, non Presl ex Fourn.; Chapm. Fl. Southern U. S. p. 581; Fourn. Mex. Pl. Enum., Gram. p. 61; Hack. in Mart. Fl. Bras. ii. 3, p. 298 in nota.
EASTERN NORTH AMERICA.—MEXICO, without locality (*Karwinski*).

34. **Andropogon tener,** Kunth, Revis. Gram. ii. p. 565, t. 197, et Enum. Pl. i. p. 489, Suppl. p. 400; Hack. in Mart. Fl. Bras. ii. 3, p. 301; Fourn. Mex. Pl. Enum., Gram. p. 63, cum var. β.
Schizachyrium tenerum, Nees, Agrostol. Bras. p. 336.
Andropogon gracilis, Presl, Reliq. Hænk. i. p. 336.
Andropogon preslii, Kunth, Enum. Pl. i. p. 489.
Andropogon leptophyllus, Trin. in Mém. Acad. St. Pétersb. sér. 6. ii. p. 264; Steud. Gram. p. 365.
SOUTH-EASTERN STATES.—SOUTH MEXICO, without locality (*Schiede*), Orizaba (*Bourgeau*, 2842, 3134).—Southward to URUGUAY. Hb. Kew.

35. **Andropogon tenuirachis,** Fourn. Mex. Pl. Enum., Gram. p. 58 cum var. β.
TEXAS.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, San Angel (*Bourgeau*, 233), Orizaba (*Weber*), Tampico (*herb. Uzac*).

36. **Andropogon velatus,** Kunth, Enum. Pl. i. p. 488; Fourn. Mex. Pl. Enum., Gram. p. 61.

Andropogon vaginatus, Presl, Reliq. Hænk. i. p. 336, non Elliott ex Fourn.

MEXICO (*Hænke*).

37. **Andropogon virginicus,** Linn. Sp. Pl. ed. 1, p. 1046; Kunth, Enum. Pl. i. p. 495; Hack. in Mart. Fl. Bras. ii. 3, p. 285; S. Wats. in Proc. Am. Acad. xviii. p. 174.

Anatherum virginicum, Spreng. Pug. ii. p. 16, ex Hackel.

Anatherum domingense, Rœm. et Schult. Syst. Veg. ii. p. 809; Griseb. Fl. Brit. W. Ind. p. 559.

Andropogon domingensis, Fourn. Mex. Pl. Enum., Gram. p. 61.

MASSACHUSETTS southward.—SOUTH MEXICO, Orizaba (*Müller*, 1393).—WEST INDIES to BRAZIL. Hb. Kew.

42. CHRYSOPOGON.

Chrysopogon, Trin. Fundam. Agrostogr. p. 187; Benth. et Hook. Gen. Plant. iii. p. 1135.

A genus of about twenty species spread over the warmer regions of both hemispheres and extending to Southern Europe and North America. Hackel includes this in *Sorghum,* and treats most of the forms enumerated below as varieties of one species. We follow Fournier mainly because we find it impossible, in the absence of authenticated specimens, to harmonize the synonymy of the two authors. Bentham appears to have regarded *C. avenaceus*, *C. stipoides*, *C. nutans*, and *C. minarum* as distinct species.

1. **Chrysopogon avenaceus,** Benth. in Journ. Linn. Soc. xix. p. 73; Vasey, Grasses of U. S. p. 20.

Andropogon avenaceus, Michx. Fl. Bor.-Am. i. p. 58; Kunth, Enum. Pl. i. p. 503; Fourn. Mex. Pl. Enum., Gram. p. 56.

Sorghum avenaceum, Chapm. Fl. Southern U. S. p. 583.

Andropogon ciliatus, Elliott, Sketch, i. p. 144.

Andropogon stipoides, H. B. K. Nov. Gen. et Sp. i. p. 189; Kunth, Synopsis, i. p. 243, non Enum. Pl. i. p. 487.

Sorghum nutans, A. Gr., subspecies *a. avenaceum,* Hack. in Mart. Fl. Bras. ii. 3, p. 274.

Andropogon humboldtianus, Steud. Gram. p. 392.

Andropogon albescens, Fourn. Mex. Pl. Enum., Gram. p. 56?

CAROLINA to FLORIDA and TEXAS.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*). —COLOMBIA to BRAZIL.

2. **Chrysopogon francavillanus,** Hemsl.

Andropogon francavillanus, Fourn. Mex. Pl. Enum., Gram. p. 56.

Andropogon stipoides, Ch. et Schl. in Linnæa, vi. p. 39, non H. B. K. nec Kunth ex Fourn.

Andropogon condensatus, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 18), non H. B. K.

SOUTH MEXICO, without locality (*Schiede & Deppe*), Orizaba (*Botteri*, 140; *Müller*, 2002), San Juan del Rio (*Bourgeau*, 2871), Mirador (*Galeotti*, 5711). Hb. Kew.

The Brazilian specimens referred to this by Fournier are said by Hackel to belong to

C. nutans. *Chrysopogon stipoides*, Trin. (Mém. Acad. St. Pétersb. 1836, p. 93), Hackel identifies with *Andropogon minarum*, Kunth (*Chrysopogon*, Benth.), an apparently endemic Brazilian species.

3. **Chrysopogon nutans,** Benth. in Journ. Linn. Soc. xix. p. 73.

Andropogon nutans, Linn. Sp. Pl. ed. 1, p. 1045; Fourn. Mex. Pl. Enum., Gram. p. 56.
Sorghum nutans, A. Gr. Manual Bot. Northern U. S. ed. 2, p. 284; Hack. in Mart. Fl. Bras. ii. 3, p. 276 (subsp. *linneanum*).
Andropogon incompletus, Presl, Reliq. Hænk. i. p. 342; Benth. Bot. Voy. 'Sulphur,' p. 178.
Sorghum secundum, Chapm. Fl. Southern U. S. p. 583, ex Fournier.

FLORIDA; GEORGIA; TEXAS.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Escamela (*Bourgeau*, 3359), Orizaba (*Schaffner*), Mirador (*Schaffner*). Hb. Kew.

[*Sorghum vulgare*, Pers., and *S. halepense*, Pers., are cultivated and more or less naturalized in the warmer parts of America, including Mexico.]

Series B. POACEÆ.

Poaceæ, Benth. et Hook. Gen. Plant. iii. p. 1076.

Distinguished generally from the *Panicaceæ* by the pedicel being continuous (not articulated) below the empty glumes, the spikelet being instead usually articulated just within the empty glumes.

Tribe VII. PHALARIDEÆ.

Phalarideæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1083.

Bentham divides this tribe into two groups, the *Genuinæ* and the *Pseudoryzeæ*. The former consist of the southern genera *Ehrharta*, *Microlæna*, and *Tetrarhena*, and the more familiar *Phalaris*, *Anthoxanthum*, and *Hierochloe*—comprising together between fifty and sixty species. The *Pseudoryzeæ* consist of the two monotypic Mediterranean genera *Crypsis* and *Cornucopiæ*, and *Alopecurus*, of which there are about twenty species, indigenous in Europe and temperate Asia.

43. PHALARIS.

Phalaris, Linn. Gen. Plant. n. 42; Benth. et Hook. Gen. Plant. iii. p. 1138.

There are about ten species, inhabiting the Mediterranean region, from the Canary Islands to Afghanistan and extratropical North and South America; and two of the European species are now widely colonized, including *P. minor*, Retz., in Mexico. This is very near the common North- and South-American *P. intermedia*, Bosc.

1. **Phalaris arundinacea,** Linn. Sp. Pl. ed. 1, p. 55; S. Wats. Bot. Calif. ii. p. 265; A. Gr. Manual Bot. Northern U. S. ed. 5, p. 643.
Phalaris americana, Fourn. Mex. Pl. Enum., Gram. p. 70, non Elliott.

CANADA and NORTH-EASTERN STATES to CALIFORNIA, but apparently not in the South-

eastern States.—South Mexico, along the canal near Santa Anita, in the valley of Mexico (*Bourgeau*, 531).—Europe and Temperate Asia. Hb. Kew.

Fournier refers Bourgeau's number 531 to *Phalaris americana*, Elliott, which is a synonym of the very different *P. intermedia*, Bosc. The error seems to have arisen from the fact of Elliott having cited the *P. arundinacea* of Michaux's 'Flora Boreali-Americana' (i. p. 43) as a synonym of the weak annual grass he described and named *P. americana*.

44. HIEROCHLOE.

Hierochloe, Gmel. Fl. Sibir. i. p. 100; Benth. et Hook. Gen. Plant. iii. p. 1139.

About eight species inhabiting the mountainous and frigid regions of the northern hemisphere, Australia, New Zealand, South Africa, and extratropical South America.

1. **Hierochloe mexicana**, Benth. in Journ. Linn. Soc. xix. p. 77, et in Benth. et Hook. Gen. Plant. iii. p. 1139.

Ataxia mexicana, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 7), nomen tantum; Fourn. Mex. Pl. Enum., Gram. p. 71, descriptio.

South Mexico, Cordillera of Oaxaca at 8000 feet (*Galeotti*, 5756). Hb. Kew.

Tribe VIII. AGROSTIDEÆ.

Agrostideæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1084.

Thirty-eight genera are included in this tribe; sixteen of them are monotypic, yet the tribe is very rich in species, which are spread over the whole area of the order. Thus *Aristida*, *Stipa*, *Sporobolus*, *Agrostis*, and *Deyeuxia* average one hundred species each.

45. ARISTIDA.

Aristida, Linn. Gen. Plant. n. 94; Benth. et Hook. Gen. Plant. iii. p. 1140.

Species numerous, probably exceeding one hundred, and very widely dispersed in the warmer regions of both hemispheres; rare in Europe and Extratropical Asia; several in North America north of Mexico.

1. **Aristida barbata**, Fourn. Mex. Pl. Enum., Gram. p. 78.

South Mexico, valley of Mexico (*Schaffner*).

2. **Aristida capillacea**, Lam. Ill. i. p. 156; Presl, Reliq. Hænk. i. p. 224; Trin. et Rupr. Sp. Gram. Stip. p. 110; Döll in Mart. Fl. Bras. ii. 3, p. 21; Fourn. Mex. Pl. Enum., Gram. p. 77.

Chætaria capillacea, Beauv. Agrostogr. p. 158.

Chætaria capillaris, Nees, Agrostol. p. 388, excl. syn. Cav., et in Seem. Bot. Voy. 'Herald,' p. 225.

Mexico (*Karwinski* ex Trin. et Rupr.); Panama (*Hænke*), Santiago, Veraguas (*Seemann*, 134).—Colombia to Peru, Guiana, and Brazil. Hb. Kew.

[*Aristida chapadensis*, Trin., *A. implexa*, Trin., and *A. riparia*, Trin., Brazilian species, are recorded from Mexico, doubtless erroneously, by Steudel, Gram. p. 136.]

3. **Aristida curvifolia,** Fourn. Mex. Pl. Enum., Gram. p. 78.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico (*Karwinski*).

4. **Aristida flexuosa,** Fourn. Mex. Pl. Enum., Gram. p. 77.

South Mexico, Santa Fé near Mexico (*Bourgeau*, 677 pro parte). Hb. Kew.

There are three species intermixed under Bourgeau's 677 in the Kew set.

5. **Aristida geminiflora,** Fourn. Mex. Pl. Enum., Gram. p. 77.

South Mexico, Mirador, Vera Cruz (*Schaffner*).

6. **Aristida glauca,** Steud. Gram. p. 135.

Chætaria glauca, Nees in Linnæa, xix. p. 688.

Mexico, without locality (*Aschenborn*).

7. **Aristida grisebachiana,** Fourn. Mex. Pl. Enum., Gram. p. 78, cum var. β. *decolorata.*

South Mexico, Mirador and Chapultepec (*Schaffner*), Ejutla and Ocotlan (*Liebmann*).

8. **Aristida humboldtiana,** Trin. et Rupr. Sp. Gram., Stip. p. 118; Fourn. Mex. Pl. Enum., Gram. p. 77.

Andropogon divaricatus, Humb. et Bonpl. ex Willd. Enum. Pl. Hort. Berol. i. pp. 99 et 100 nomen ("sed vix descriptio, quæ potius ad *A. jacquinianam,* Willd. hb. no. 1802, H. B. K. Nov. Gen. et Sp. i. p. 123," Fournier).

South Mexico, between Salamanca and Guanajuato at 6000 feet (*Humboldt & Bonpland*), Toluca (*Berlandier*), Mirador (*Schaffner*), Santa Fé (*Bourgeau,* 677 pro parte), Tacubaya (*Schaffner*). Hb. Kew.

Schaffner's 1057, from San Luis Potosi, referred by S. Watson (Proc. Am. Acad. xviii. p. 174) to *A. divaricata,* Humb. et Bonpl., is altogether different from the plant referred hither by Fournier, but we are unable to decide who is right. *Aristida divaricata,* Lagasca, Gen. et Sp. Nov. p. 3, Nova Hispania, Sessé, is a doubtful unrecognized species. *Aristida jacquiniana,* Tausch. (*vide* Trin. et Rupr. Sp. Gram. Stip. p. 119), syn. *Aristida divaricata,* Jacq. Eclog. Gram. p. 7, t. 6, was founded on a cultivated plant of uncertain origin. *Chæturus divaricatus,* DC. Cat. Hort. Monsp. 1813, p. 19, is probably the same thing, and this was also cultivated under the names *Agrostis divaricata* and *Muehlenbergia divaricata.*

9. **Aristida interrupta,** Cav. Ic. v. p. 45, t. 471. fig. 2; Trin. et Rupr. Sp. Gram., Stip. p. 130; Fourn. Mex. Pl. Enum., Gram. p. 79.

Chætaria interrupta, Beauv. Agrostogr. p. 30.

South Mexico, near Chalma (ex *Cavanilles*), Orizaba (*Bourgeau,* 3357; *Thomas; Botteri*). Hb. Kew.

Fournier's identification, which we have accepted, was made from the description of Trinius and Ruprecht.

10. **Aristida jorullensis,** Kunth, Revis. Gram. i. p. 62, et Enum. Pl. i. p. 194.
Streptachne pilosa, H. B. K. Nov. Gen. et Sp. i. p. 124; Presl, Reliq. Hænk. i. p. 225.
Ortachne pilosa, Nees in Seem. Bot. Voy. 'Herald,' p. 225.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, near Jorullo at 2400 feet (*Humboldt & Bonpland*), Mirador (*Schaffner*), without locality (*Liebmann*); Nicaragua (*Lévy*, 351); Panama, Santiago, Veraguas (*Seemann*, 126). Hb. Kew.

11. **Aristida karwinskiana,** Trin. et Rupr. Sp. Gram., Stip. p. 121; Fourn. ex. Pl. Enum., Gram. p. 77.
Mexico (*Karwinski*).

12. **Aristida liebmannii,** Fourn. Mex. Pl. Enum., Gram. p. 78.
South Mexico, Mirador (*Liebmann*).

13. **Aristida longiramea,** Presl, Reliq. Hænk. i. p. 224; Trin. et Rupr. Sp. Gram., Stip. p. 121; Fourn. Mex. Pl. Enum., Gram. p. 79.
Chætaria glauca, Nees in Linnæa, xix. p. 688 ?, ex Fourn.
Aristida glauca, Steud. Gram. p. 135.
Mexico, without locality (*Aschenborn*).

14. **Aristida muehlenbergioides,** Fourn. Mex. Pl. Enum., Gram. p. 79.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Cañon de las Minas (*Karwinski*).

15. **Aristida nigrescens,** Presl, Reliq. Hænk. i. p. 223; Fourn. Mex. Pl. Enum., Gram. p. 79.
Andropogon dispersa, ε. *nigrescens,* Trin. et Rupr. Sp. Gram., Stip. p. 130.
Mexico (*Hœnke*).

16. **Aristida orizabensis,** Fourn. Mex. Pl. Enum., Gram. p. 78.
South Mexico, valley of Orizaba (*Schaffner; Müller*, 2103). Hb. Kew.

17. **Aristida purpurea,** Nutt. in Trans. Am. Phil. Soc. v. (1837), ex Trin. et Rupr. Sp. Gram., Stip. p. 107 (β. *berlandieri*); Fourn. Mex. Pl. Enum., Gram. p. 79.
Texas; New Mexico.—North Mexico, Monterey, Nuevo Leon (*Berlandier*, 1837).

18. **Aristida scabra,** Kunth, Revis. Gram. i. p. 62, et Enum. Pl. i. p. 193.
Muhlenbergia scabra, Trin. et Rupr. Sp. Gram., Stip. p. 183.
Streptachne scabra, H. B. K. Nov. Gen. et Sp. i. p. 124, t. 40.
Ortachne scabra, Fourn. Mex. Pl. Enum., Gram. p. 80.
South Mexico, near Toluca at 8040 feet (*Humboldt & Bonpland*), Ejutla (*Liebmann*), Acapulco (*Thiebaut*), Orizaba (*Schaffner*), Vera Cruz (*Gouin*).

19. **Aristida schaffneri,** Fourn. Mex. Pl. Enum., Gram. p. 78.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, without locality (*Liebmann*), Mirador and Orizaba (*Schaffner*).

20. **Aristida schiedeana,** Trin. et Rupr. Sp. Gram., Stip. p. 120; Fourn. Mex. Pl. Enum., Gram. p. 77.

Podosæmum stipoides, Ch. et Schl. in Linnæa, vi. p. 36, non H. B. K. ex Fourn.

South Mexico, near Jalapa (*Schiede & Deppe*), Santa Fé (*Bourgeau*, 677 in part), Consoquitla (*Liebmann*).

21. **Aristida setifolia,** H. B. K. Nov. Gen. et Sp. i. p. 122; Hack. in Mart. Fl. Bras. ii. 3, p. 22, cum var. β. *grandiflora.*

Aristida bromoides, H. B. K. loc. cit.; S. Wats. in Proc. Am. Acad. xviii. p. 174.

Aristida coarctata, H. B. K. loc. cit.; Fourn. Mex. Pl. Enum., Gram. p. 79.

Chætaria setifolia, C. bromoides, et *C. coarctata,* Rœm. et Schult. Syst. Veg. ii. p. 396.

North Mexico, Parras and Saltillo (*Palmer*, 1351, 1352), San Luis Potosi (*Schaffner*); South Mexico, Barras and Guanajuato at 6350 feet (*Humboldt & Bompland*).—Brazil. Hb. Kew.

22. **Aristida spadicea,** H. B. K. Nov. Gen. et Sp. i. p. 123; Kunth, Enum. Pl. i. p. 189, non Trin. in Mém. Acad. Sc. St. Petérsb. 1836, p. 43, ex Fourn. Mex. Pl. Enum., Gram. p. 77.

Aristida divaricata, Lagasca, Elench. p. 3, ex Fourn.

South Mexico, between Guanajuato and Mina de Belgrado, at 7200 feet (*Humboldt & Bonpland*).—Orinoco.

23. **Aristida stricta,** Michx. Fl. Bor.-Am. i. p. 41; Kunth, Enum. Pl. i. p. 187; Chapm. Fl. Southern U. S. p. 555.

Chætaria stricta, Beauv. Agrostogr. p. 30.

Virginia to Florida and Texas.—Mexico (ex *Kunth*).—Cuba.

24. **Aristida tenuis,** Kunth, Revis. Gram. i. p. 62, et Kunth, Enum. Pl. i. p. 193.

Muehlenbergia tenuis, Trin. et Rupr. Sp. Gram., Stip. p. 183.

Streptachne tenuis, H. B. K. Nov. Gen. et Sp. i. p. 124; Presl, Reliq. Hænk. i. p. 226.

Ortachne tenuis, Fourn. Mex. Pl. Enum., Gram. p. 80.

South Mexico, between Victoria and Rio Blanco, and at Hacienda del Limon (*Karwinski*), barranca near Cuernavaca (*Bourgeau*, 1295), Orizaba (*Botteri*), Vera Cruz (*Gouin*).

25. **Aristida ternipes,** Cav. Ic. Pl. v. p. 46; Steud. Gram. p. 136.

Panama (*Née*).

26. **Aristida virleti,** Fourn. Mex. Pl. Enum., Gram. p. 76.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Müller*, 2140), Laguna, Talea (*Liebmann*).

46. STIPA.

Stipa, Linn. Gen. Plant. n. 90; Benth. et Hook. f. Gen. Plant. p. 1141.

About 100 species very widely dispersed in the temperate and tropical regions of both hemispheres.

1. **Stipa avenacea,** Linn. Sp. Pl. ed. i. p. 78; Kunth, Enum. Pl. i. p. 181; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 617; S. Wats. in Proc. Am. Acad. xviii. p. 174.

NEW ENGLAND to WISCONSIN, and southward to FLORIDA and TEXAS, and ARIZONA.—NORTH MEXICO, San Luis Potosi (*Schaffner*, 1055; *Parry & Palmer*, 929). Hb. Kew.

We have accepted Watson's determination of the North-Mexican specimens indicated above, as *Stipa avenacea* is an exceedingly common species in the eastern States. He also refers Bourgeau's South-Mexican 669 to this species, while Fournier cites the same number under *S. eminens*; possibly two species were distributed under this number.

2. **Stipa cærulea,** Presl, Reliq. Hænk. i. p. 227; Steud. Gram. p. 125.

MEXICO (*Hænke*).

Not seen by Fournier.

3. **Stipa chapulcensis,** Fourn. Mex. Pl. Enum., Gram. p. 74.

SOUTH MEXICO, Chapulco (*Liebmann*).

4. **Stipa cirrosa,** Fourn. Mex. Pl. Enum., Gram. p. 75.

MEXICO, without locality (*Karwinski*).

5. **Stipa coleotricha,** Steud. Gram. p. 125.

SOUTH MEXICO, Cordillera of Vera Cruz (*Galeotti*).

This is one of the species not found by Fournier in the Steudel Herbarium.

6. **Stipa editorum,** Fourn. Mex. Pl. Enum., Gram. p. 75.

SOUTH MEXICO, in the elevated valley between "La Noria del Viejo and la Miquiguana" (*Karwinski*).

7. **Stipa eminens,** Cav. Ic. v. p. 42. t. 467, fig. 1; Thurber in S. Wats. Fl. Calif. ii. p. 286; Fourn. Mex. Pl. Enum., Gram. p. 75.

CALIFORNIA.—SOUTH MEXICO, Tacubaya (*Schaffner*), Zacoalco near Guadalupe (*Bourgeau*, 699). Hb. Kew.

Fournier also records this species from Quito and Montevideo, but Döll. (in Mart. Fl. Bras. ii. 3, p. 8) follows Trinius and Ruprecht in retaining the South-American plant as a distinct species—*S. neesiana.*

8. **Stipa erecta,** Fourn. Mex. Pl. Enum., Gram. p. 75.

SOUTH MEXICO, Tehuacan (*Liebmann*).

9. **Stipa grisebachii,** Fourn. Mex. Pl. Enum., Gram. p. 74.

SOUTH MEXICO, in the valley of Mexico (*Schaffner*), hills near Santa Fé, in the valley of Mexico (*Bourgeau*, 677).

10. **Stipa jarava,** Beauv. Agrostogr. p. 19, t. 6. fig. 3; Trin. et Rupr. Sp. Gram., Stip. p. 42; Fourn. Mex. Pl. Enum., Gram. p. 76.

Jarava ichu, Ruiz et Pav. Prodr. Fl. Peruv. p. 2, t. 1.
Stipa eriostachya, H. B. K. Nov. Gen. et Sp. i. p. 127, t. 41.
Stipa ichu, Kunth, Revis. Gram. i. p. 60.
Stipa pungens, Nees et Meyen in Mey. Itin. i. p. 484.
Stipa gynerioides, Phil. in Anal. Univ. Chile, 1870, p. 103, ex Fournier.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Moran at 7800 to 8400 feet (*Humboldt & Bonpland*), Cordova and Orizaba (*Schaffner*), Montezuma near Cuantepec (*Bourgeau*, 1156), Chinantla and Orizaba at 8000 feet (*Liebmann*).—ECUADOR; PERU; TUCUMAN. Hb. Kew.

11. **Stipa leucotricha,** Trin. et Rupr. Sp. Gram., Stip. p. 54; Fourn. Mex. Pl. Enum., Gram. p. 73.

TEXAS.—SOUTH MEXICO, Pedregal, near Tizapan, in the valley of Mexico (*Bourgeau*, without number).

12. **Stipa liebmanni,** Fourn. Mex. Pl. Enum., Gram. p. 76.

SOUTH MEXICO, in the elevated plain of Cerro Leon, near Perote (*Liebmann*).

13. **Stipa linearifolia,** Fourn. Mex. Pl. Enum., Gram. p. 73.

SOUTH MEXICO, near Tacubaya (*Schaffner*).

14. **Stipa mucronata,** H. B. K. Nov. Gen. et Sp. i. p. 125; Kunth, Enum. Pl. i. p. 181; Fourn. Mex. Pl. Enum., Gram. p. 74.

SOUTH MEXICO, near Tacubaya (*Schaffner*), in mountains near Actopan and Magdalena at 6250 feet (*Humboldt & Bonpland*).

15. **Stipa subulata,** Fourn. Mex. Pl. Enum., Gram. p. 75.

SOUTH MEXICO, Tanque Colorado (*Karwinski*).

16. **Stipa trochlearis,** Nees et Meyen in Mey. Itin. i. p. 484; Trin. et Rupr. Sp. Gram., Stip. p. 30; Fourn. Mex. Pl. Enum., Gram. p. 73.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Zacoalco, near Guadalupe, in the valley of Mexico (*Bourgeau*, 538).—PERU. Hb. Kew.

17. **Stipa virescens,** H. B. K. Nov. Gen. et Sp. i. p. 126; Kunth, Enum. Pl. i. p. 182; Fourn. Mex. Pl. Enum., Gram. p. 74, cum var. β.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Santa Rosa, Cuesta del Belgrado and Guanajuato at 7000 feet (*Humboldt & Bonpland*), Chinantla and Cumbre de Estepec (*Liebmann*). Hb. Kew.

18. **Stipa viridula,** Trin. Act. Petrop. 1836, p. 39, ex Trin. et Rupr. Sp. Gram., Stip. p. 57; S. Wats. in Proc. Am. Acad. xviii. p. 174.

Oregon southward to California.—North Mexico, Lerios, Coahuila (*Palmer*, 1349). Hb. Kew.

19. **Stipa virletii,** Fourn. Mex. Pl. Enum., Gram. p. 75.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

47. ORYZOPSIS.

Oryzopsis, Michx. Fl. Bor.-Am. i. p. 51, t. 9; Benth. et Hook. Gen. Plant. iii. p. 1142.

A genus of about twenty-four species, inhabiting the temperate and subtropical regions of the northern hemisphere and extratropical South America.

1. **Oryzopsis fimbriata,** Hemsl.

Stipa fimbriata, H. B. K. Nov. Gen. et. Sp. i. p. 126; Kunth, Revis. Gram. i. p. 263, t. 43; Peyr. in Linnæa, xxx. p. 5; Fourn. Mex. Pl. Enum., Gram. p. 74, cum var. β.

Milium mexicanum, Spreng.; Trin. et Rupr. Sp. Gram., Stip. p. 34.

South Mexico, barranca near Santa Fé (*Bourgeau*, 676), near Toluca (*Heller*), Mirador (*Schaffner; Liebmann*), Real del Monte (*Coulter*, 1650), between Guanajuato and Burras (*Humboldt & Bonpland*). Hb. Kew.

In Bentham and Hooker's 'Genera Plantarum,' Kunth's t. 43 is cited under *Stipa*, while the plant itself was sorted into *Oryzopsis*, where it is better placed than in the former genus. The next species is very closely allied to this, but it has a glabrous, almost crustaceous flowering-glume. Fournier refers Coulter's 1654 to *Stipa fimbriata*, but it has not the broad, short florets, and is apparently specifically different.

2. **Oryzopsis fournieriana,** Hemsl.

Stipa brevicalyx, Fourn. Mex. Pl. Enum., Gram. p. 150.

North Mexico, region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 959). Hb. Kew.

48. MUEHLENBERGIA.

Muehlenbergia, Schreb. Gen. Plant. p. 44; Benth. et Hook. Gen. Plant. iii. p. 1143.

Nearly sixty species are known, the greater part of them inhabiting North and Andine America, a few Central and Eastern Asia.

1. **Muehlenbergia acutifolia,** Fourn. Mex. Pl. Enum., Gram. p. 86.

South Mexico, Orizaba (*Bourgeau*, 3327). Hb. Kew.

2. **Muehlenbergia affinis,** Trin. Agrostidea, ii. p. 55; Steud. Gram. p. 179; Fourn. Mex. Pl. Enum., Gram. p. 82.

Muehlenbergia trichopodes, Chapm. Fl. Southern U. S. p. 553, ex Fourn.

Carolina to Florida.—South Mexico, Toluca (*Berlandier*), Santa Fé (*Bourgeau*, 753 in part), Orizaba (*Botteri*). Hb. Kew.

3. **Muehlenbergia anomala,** Fourn. Mex. Pl. Enum., Gram. p. 82.
MEXICO, without locality (*Liebmann*).

4. **Muehlenbergia berlandieri,** Trin. Agrostidea, ii. p. 53; Steud. Gram. p. 179; Fourn. Mex. Pl. Enum., Gram. p. 83.
SOUTH MEXICO, mountains around Mexico (*Berlandier*), Teotihuacan (*Hahn*).
S. Watson (Proc. Am. Acad. xviii. p. 174) doubtingly refers to this species Wright's 1992 and Schaffner's 1057, from San Luis Potosi.

5. **Muehlenbergia botteri,** Fourn. Mex. Pl. Enum., Gram. p. 85.
SOUTH MEXICO, Orizaba (*Botteri*, 87; *Müller*, 2006), without locality (*Karwinski*).

6. **Muehlenbergia bourgæi,** Fourn. Mex. Pl. Enum., Gram. p. 86.
SOUTH MEXICO, Desierto Viejo, valley of Mexico and Montezuma near Cuantepec (*Bourgeau*, 455, 1309), Guazimalpan (*Schaffner*). Hb. Kew.

7. **Muehlenbergia breviseta,** Griseb. ex Fourn. Mex. Pl. Enum., Gram. p. 83.
SOUTH MEXICO, Orizaba (*Müller*, 1453, 2003, 2093).
Fournier suggests that the doubtful *Podosæmum glaucum*, Nees (Linnæa, xix. p. 689), is of this affinity.

8. **Muehlenbergia calamagrostidea,** Kunth, Revis. Gram. i. p. 63, et Enum. Pl. i. p. 199; Fourn. Mex. Pl. Enum., Gram. p. 84; S. Wats. in Proc. Am. Acad. xviii. p. 174.
Calamagrostis quitensis, H. B. K. Nov. Gen. et Sp. i. p. 133.
Calamagrostis mexicana, Kunth, Synopsis Pl. Æquin. Orb. Nov. iv. p. 473.
Arundo quitensis, Rœm. et Schult. Syst. Veg. ii. p. 509.
Muehlenbergia longiseta, Benth. Pl. Hartw. p. 28 (cfr. ibid. p. 347).
NORTH MEXICO, Parras, Coahuila (*Palmer*, 1348), San Luis Potosi (*Schaffner*), region of San Luis Potosi 6000 to 8000 feet (*Parry & Palmer*, 930); SOUTH MEXICO, Aguas Calientes (*Hartweg*, 248), Vera Cruz (*Gouin*), Oaxaca (*Ghiesbreght*), Real del Monte (*Coulter*, 1655), valley of Mexico (*Bourgeau*, 218, 909), Cuernavaca (*Schaffner*), near Zopilote, Mescala, and Sochipala at 1600 to 3100 feet (*Humboldt & Bonpland*). Hb. Kew.

9. **Muehlenbergia ciliata,** Trin. Gram. Unifl. p. 193; Kunth, Enum. Pl. i. p. 199; Fourn. Mex. Pl. Enum., Gram. p. 83.
Podosæmum ciliatum, H. B. K. Nov. Gen. et Sp. i. p. 128.
Trichochloa ciliata, Rœm. et Schult. Syst. Veg. ii. p. 386.
Polypogon ciliatus, Spreng. Syst. Veg. i. p. 243.
SOUTH MEXICO, Volcan de Jorullo 2940 feet (*Humboldt & Bonpland*), San Nicolas, near Mexico (*Bourgeau*, 1034), Orizaba (*Müller*, 2074, 2105), Escamela (*Bourgeau*, 3171); GUATEMALA, Dueñas (*Godman & Salvin*). Hb. Kew.

10. **Muehlenbergia clomena,** Trin. Gram. Unifl. p. 194; Kunth, Enum. Pl.

i. p. 203; Fourn. Mex. Pl. Enum., Gram. p. 86; S. Wats. in Proc. Am. Acad. xviii. p. 174.

Clomena peruviana, Beauv. Agrostogr. p. 28, t. 7. fig. 10.

Muehlenbergia pusilla, Steud. Gram. p. 177.

North Mexico, San Luis Potosi (*Schaffner*, 1069); South Mexico, Toluca (*Berlandier*, 1141).—Peru. Hb. Kew.

11. **Muehlenbergia debilis,** Trin. Gram. Unifl. p. 193, et Agrostidea, ii. p. 49; Steud. Gram. p. 179.

Podosæmum debile, H. B. K. Nov. Gen. et Sp. i. p. 128, et vii. t. 681.

Podosæmum setosum, H. B. K. loc. cit. p. 129.

Muehlenbergia setosa, Trin. Gram. Unifl. p. 193; Fourn. Mex. Pl. Enum., Gram. p. 86, cum var. β.

Muehlenbergia microsperma, Trin. ibid.; Fourn. loc. cit. p. 85.

Trichochloa debilis et *T. setosa,* Rœm. et Schult. Syst. Veg. ii. pp. 385 et 386.

Trichochloa microsperma, DC. Cat. Monsp. p. 151.

Agrostis debilis et *A. setosa,* Spreng. Syst. Veg. i. p. 262.

Agrostis microsperma, Lagasca, Elench. p. 2.

South Mexico, near Tula, at 6600 feet (*Humboldt & Bonpland*), Orizaba (*Schaffner*), Ocotlan and San Lorenzo (*Liebmann*).

We have followed Trinius in the synonymy of this species, although Fournier treats *M. setosa* and *M. microsperma* as distinct from *M. debilis.*

12. **Muehlenbergia distichophylla,** Kunth, Enum. Pl. i. p. 202; Fourn. Mex. Pl. Enum., Gram. p. 81.

Podosæmum distichophyllum, Presl, Reliq. Hænk. i. p. 231.

South Mexico, Dolores, Talea, Micoatlan, and San Andres (*Liebmann*).—Colombia. Hb. Kew.

Vasey ('The Grasses of the United States,' p. 23) records this from New Mexico and Arizona.

13. **Muehlenbergia dubia,** Fourn. Mex. Pl. Enum., Gram. p. 82.

South Mexico, Chinantla (*Liebmann*).

Fournier gives only the following brief description:—"Vix nota, e culmo tantum foliis orbato. Affinis *M. mucronatæ.* Panicula angusta, 5-pollicaris; glumæ hyalinæ æquales obtusæ dimidiam spiculam æquantes, palea inferiore brevissime mucronata."

14. **Muehlenbergia erecta,** Presl, Reliq. Hænk. i. p. 231, non Schreb.

Mexico (*Hœnke*).

15. **Muehlenbergia exilis,** Fourn. Mex. Pl. Enum., Gram. p. 84.

Muehlenbergia tenella, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 4), non Trin. ex Fourn.

South Mexico, Jalapa 3000 feet, and Mirador 6500 feet (*Galeotti*, 5691), Orizaba (*Botteri*, 1207), Consoquitla (*Liebmann*), barranca near Cuernavaca and Cordova (*Bourgeau*, 1298, 1665). Hb. Kew.

16. **Muehlenbergia expansa,** Trin. Agrostidea, ii. p. 53; Fourn. Mex. Pl. Enum., Gram. p. 82.

Cinna arachnoidea, Kunth, Revis. Gram. i. p. 67, et Enum. Pl. i. p. 207.
Vilfa arachnoidea, Beauv. Agrostogr. p. 147.

MEXICO, in the Sierra Madre, between Tanque Colorado and La Michiguana and Cañon de la Minas (*Karwinski*).

17. **Muehlenbergia glabrata,** Trin. Gram. Unifl. 194; Fourn. Mex. Pl. Enum., Gram. p. 82.

Podosæmum glabratum, H. B. K. Nov. Gen. et Sp. i. p. 130.

SOUTH MEXICO, Santa Rosa de la Sierra and Cañada de Acabuca, 8000 feet (*Humboldt & Bonpland*).

18. **Muehlenbergia gracilis,** Trin. Gram. Unifl. p. 193; Fourn. Mex. Pl. Enum., Gram. p. 87.

Podosæmum gracile, H. B. K. Nov. Gen. et Sp. i. p. 131.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Volcan de Jorullo 3480 feet (*Humboldt & Bonpland*), near Orizaba (*Schaffner*).

19. **Muehlenbergia implicata,** Trin. Gram. Unifl. p. 193; Fourn. Mex. Pl. Enum., Gram. p. 85.

Podosæmum implicatum, H. B. K. Nov. Gen. et Sp. i. p. 127.

SOUTH MEXICO, near Lake Cuisco and Puerto de Andaracuas, 5640 feet (*Humboldt & Bonpland*), Tacubaya and Orizaba (*Schaffner*), Orizaba (*Müller*, 2102, 2104), Montezuma near Cuantepec (*Bourgeau*, 1157), Consoquitla (*Liebmann*), Toluca (*Berlandier*).

20. **Muehlenbergia liebmannii,** Fourn. Mex. Pl. Enum., Gram. p. 83.

SOUTH MEXICO, Alpatlahua (*Liebmann*).

21. **Muehlenbergia mucronata,** Trin. Gram. Unifl. p. 194; Fourn. Mex. Pl. Enum., Gram. p. 81.

Podosæmum mucronatum, H. B. K. Nov. Gen. et Sp. i. p. 129.
Trichochloa mucronata, Rœm. et Schult. Syst. Veg. ii. p. 387.
Agrostis mucronata, Spreng. Syst. Veg. i. p. 262.

SOUTH MEXICO, near Cerro de Serena, Santa Rosa, and Los Joares, Guanajuato, at 7620 to 8150 feet (*Humboldt & Bonpland*).

22. **Muehlenbergia quadridentata,** Trin. Gram. Unifl. p. 194; Kunth, Enum. Pl. i. p. 201; Fourn. Mex. Pl. Enum., Gram. p. 86.

Podosæmum quadridentatum, H. B. K. Nov. Gen. et Sp. i. p. 130.
Trichochloa quadridentata, Rœm. et Schult. Syst. Veg. ii. p. 388.
Agrostis quadridentata, Spreng. Syst. Veg. i. p. 263.
Muehlenbergia gracilis, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 3).

SOUTH MEXICO, Toluca, Puente de Tepare et Playas de Jorullo 2400 to 7800 feet (*Humboldt & Bonpland*), peak of Orizaba at 12,500 feet (*Galeotti*, 5774).

23. **Muehlenbergia rigida,** Trin. Gram. Unifl. p. 194; Fourn. Mex. Pl. Enum., Gram. p. 82.

Podosæmum rigidum, H. B. K. Nov. Gen. et Sp. i. p. 129.
Trichochloa rigida, Rœm. et Schult. Syst. Veg. ii. p. 386.
Agrostis rigida, Spreng. Syst. Veg. i. p. 262.

South Mexico, Santa Rosa (*Humboldt & Bonpland*), near Peñol de los Baños (*Bourgeau*, 675, 753), Orizaba (*Müller*, 2100). Hb. Kew.

24. **Muehlenbergia scabra,** S. Wats. in Proc. Am. Acad. xviii. p. 174.

North Mexico, San Luis Potosi (*Schaffner*, 1067). Hb. Kew.

25. **Muehlenbergia schaffneri,** Fourn. Mex. Pl. Enum., Gram. p. 85.

South Mexico, near Tacubaya and at Mirador (*Schaffner*). Hb. Kew.

26. **Muehlenbergia setarioides,** Fourn. Mex. Pl. Enum., Gram. p. 84.

South Mexico, Orizaba (*Thomas; Müller*, 2022; *Botteri*, 1202; *Bourgeau*, 3362), Sierra de Christobal, near Eugenio (*Schaffner*). Hb. Kew.

27. **Muehlenbergia spiciformis,** Trin. Agrostidea, ii. p. 42; Fourn. Mex. Pl. Enum., Gram. p. 86.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Müller*, 2100 in part), valley of Mexico (*Schaffner*). Hb. Kew.

28. **Muehlenbergia stipoides,** Trin. Gram. Unifl. p. 194; Kunth, Enum. Pl. i. p. 201; Fourn. Mex. Pl. Enum., Gram. p. 83.

Podosæmum stipoides, H. B. K. Nov. Gen. et Sp. i. p. 131.
Trichochloa stipoides, Rœm. et Schult. Syst. Veg. ii. p. 388.
Agrostis stipoides, Spreng. Syst. Veg. i. p. 263.

South Mexico, Desierto Viejo (*Bourgeau*, 1152), peak of Orizaba at 8000 feet (*Liebmann*), without locality (*Schaffner*).—Ecuador. Hb. Kew.

29. **Muehlenbergia stricta,** Kunth, Enum. Pl. i. p. 202; Fourn. Mex. Pl. Enum., Gram. p. 82, cum var. β.

Podosæmum strictum, Presl, Reliq. Hænk. i. p. 230.
Muehlenbergia capillaris, Trin. Gram. Unifl. p. 191, ex Fourn.

Texas.—South Mexico, Orizaba (*Botteri*, 1262; *Schaffner; Bourgeau*, 3141), Mirador (*Liebmann*), Consoquitla (*Liebmann*). Hb. Kew.

30. **Muehlenbergia subtilis,** Nees in Linnæa, xix. p. 689; Fourn. Mex. Pl. Enum., Gram. p. 84.

South Mexico, without locality (*Aschenborn*).

31. **Muehlenbergia tenella,** Trin. Gram. Unifl. p. 192; Kunth, Enum. Pl. i. p. 199; Fourn. Mex. Pl. Enum., Gram. p. 83.

Podosæmum tenellum, H. B. K. Nov. Gen. et Sp. i. p. 128.
Trichochloa tenella, Rœm. et Schult. Syst. Veg. ii. p. 385.
Polypogon tenellus, Spreng. Syst. Veg. i. p. 243.

South Mexico, between Rio Frio and Barranca de Honda, 7300 feet (*Humboldt & Bonpland*), without locality (*Liebmann*).

32. **Muehlenbergia tenuifolia,** Trin. Gram. Unifl. p. 193; Kunth, Enum. Pl. i. p. 199; Fourn. Mex. Pl. Enum., Gram. p. 84.

Calamagrostis tenuifolia, H. B. K. Nov. Gen. et Sp. i. p. 134.
Podosæmum tenuifolium, Nees in Linnæa, xix. p. 690.
Arundo tenuifolia, Rœm. et Schult. Syst. Veg. ii. p. 510.
Arundo tenella, Spreng. Pugil. ii. p. 6.

South Mexico, near the city of Mexico at 7000 feet (*Humboldt & Bonpland*), without locality (*Aschenborn*).

33. **Muehlenbergia tenuissima,** Kunth, Enum. Pl. i. p. 198; Trin. Agrostidea, ii. p. 39; Fourn. Mex. Pl. Enum., Gram. p. 85.

Podosæmum tenuissimum, Presl, Reliq. Hænk. i. p. 230.

Mexico and Panama (ex *Presl*).

34. **Muehlenbergia trinii,** Fourn. Mex. Pl. Enum., Gram. p. 84.

Muehlenbergia diversiglumis, Trin. Agrostidea, ii. p. 52.

South Mexico, Rio Blanco, near Orizaba (*Bourgeau*, 3369), Orizaba (*Botteri*, 1273, 1278). Hb. Kew.

35. **Muehlenbergia virescens,** Trin. Gram. Unifl. p. 193; Kunth, Enum. Pl. i. p. 202; Fourn. Mex. Pl. Enum., Gram. p. 87.

Podosæmum virescens, H. B. K. Nov. Gen. et Sp. i. p. 132.
Trichochloa virescens, Rœm. et Schult. Syst. Veg. ii. p. 389.
Agrostis nutans, Spreng. Syst. Veg. i. p. 263, pro parte.

South Mexico, near Santa Rosa de la Sierra and Puerto de Varientos, 7800 feet (*Humboldt & Bonpland*).

[*Milium microspermum*, Lagasca, and *M. sparsa*, Miller, Steud. Gram. p. 34, are obscure Mexican grasses, possibly of the genus *Muehlenbergia.*]

49. PERIEILEMA.

Perieilema, Presl, Reliq. Hænk. i. p. 233, t. 37. fig. *a* (*Pereilema*); Benth. et Hook. Gen. Plant. iii. p. 1144.

An exclusively American genus of three or four species, ranging from Mexico to Brazil.

1. **Perieilema ciliatum,** Fourn. Mex. Pl. Enum., Gram. p. 93.

South Mexico, Orizaba (*Bourgeau*, 3328; *Müller*, 2073; *Botteri*), Cordova (*Schaffner*). Hb. Kew.

2. **Perieilema crinitum,** Presl, Reliq. Hænk. i. p. 233, t. 37. fig. *a*; Kunth, Enum. Pl. i. p. 235; Fourn. Mex. Pl. Enum., Gram. p. 93, cum β. *cirrato*.

South Mexico, Orizaba (*Bourgeau*, 3272; *Müller*, 2068, 2072; *Botteri*, 1272, 1482), Mirador (*Schaffner*), Cordova (*Bourgeau; Schaffner*).—Colombia. Hb. Kew.

3. **Perieilema setarioides,** Fourn. Mex. Pl. Enum., Gram. p. 93.

South Mexico, Orizaba (*Thomas*).

50. LYCURUS.

Lycurus, H. B. K. Nov. Gen. et Sp. i. p. 141, t. 45; Benth. et Hook. Gen. Plant. iii. p. 1145.
Pleopogon, Nutt. in Journ. Acad. Philad. ser. 2, i. p. 189.

Restricted to America, and the following species, which are scarcely distinguishable from each other, should perhaps be regarded as forms of one.

1. **Lycurus phalaroides,** H. B. K. Nov. Gen. et Sp. i. p. 142; Kunth, Enum. Pl. i. p. 204; Fourn. Mex. Pl. Enum., Gram. p. 92.

North Mexico, San Luis Potosi (*Parry & Palmer; Virlet d'Aoust*); South Mexico, in mountains of the province of Michoacan, near Valladolid, Pazcuaro &c. at 5700 to 6350 feet (*Humboldt & Bonpland*), Chapultepec (*Schaffner*), Zacoalco, near Guadalupe (*Bourgeau*, 1415), Orizaba (*Schaffner; Müller*, 2005; *Botteri*, 1277), Chapulco (*Liebmann*). Hb. Kew.

2. **Lycurus phleoides,** H. B. K. Nov. Gen. et Sp. i. p. 142, t. 45; Kunth, Enum. Pl. i. p. 204; Fourn. Mex. Pl. Enum., Gram. p. 92.

Texas; New Mexico.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, between Guanajuato and Temascatio (*Humboldt & Bonpland*), valley of Mexico (*Schaffner*), near Zapan (*Bourgeau*, 442), Orizaba (*Thomas*), Chapultepec (*Bilimek*, 455), Zimapan 6500 feet (*Galeotti*, 5630).—Bolivia; Argentina. Hb. Kew.

51. PHLEUM.

Phleum, Linn. Gen. Plant. n. 77; Benth. et Hook. Gen. Plant. iii. p. 1146.

A genus of about ten species, inhabiting the temperate and arctic regions of the northern hemisphere and the extreme south of America.

1. **Phleum alpinum,** Linn. Sp. Pl. ed. 1, p. 59; Kunth, Enum. Pl. i. p. 29; Hook. f. Fl. Antarct. p. 371; Griseb. Pl. Lorentz. p. 211; Fourn. Mex. Pl. Enum., Gram. p. 89, cum var. β. *americano*.
Phleum hænkeanum, Presl, Reliq. Hænk. i. p. 245.

North America, in the arctic and alpine regions.—South Mexico, Peak of Orizaba 10,000 to 12,000 feet (*Linden*, 90; *Galeotti*, 5771).—Andes of Chili to Fuegia; also in alpine and arctic regions of Europe and Asia. Hb. Kew.

52. SPOROBOLUS.

Sporobolus, R. Br. Prodr. Fl. Nov. Holl. p. 169; Benth. et Hook. Gen. Plant. iii. p. 1148.
Vilfa, Beauv. Agrostogr. p. 16, pro parte, non Adans.

About eighty species are known, and they are very widely spread in temperate and tropical countries, though quite rare in Europe and Asiatic Russia. Fournier regarded *Vilfa* of Adanson as congeneric with *Sporobolus* of Brown, and, being the older name, retained it for the Mexican species. Several of his proposed new species we have not seen.

1. **Sporobolus atrovirens,** Kunth, Revis. Gram. i. p. 68, et Enum. Pl. i. p. 214.
Agrostis atrovirens, Rœm. et Schult. ii. p. 361.
Vilfa atrovirens, H. B. K. Nov. Gen. et Sp. i. p. 138; Trin. Agrostidea, i. p. 64; Fourn. Mex. Pl. Enum., Gram. p. 101.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Tacubaya (*Schaffner*), Guadalupe, valley of Mexico (*Bourgeau*, 535), without locality (*Liebmann*). Hb. Kew.

2. **Sporobolus ciliatus,** Presl, Reliq. Hænk. i. p. 242; Kunth, Enum. Pl. i. p. 216.
Vilfa ciliata, Trin. Agrostidea, i. p. 41.

PANAMA, without locality (*Hænke*), near the city of Panama (*Seemann*, 123). Hb. Kew.

Munro identified Seemann's plant with *S. ciliatus*, Presl, but the same number is referred by Nees (in Seem. Bot. Voy. 'Herald,' p. 224) to *S. rupestris*, Kunth (Revis. Gram. i. p. 267, t. 45).

3. **Sporobolus cryptandrus,** A. Gr. Man. Bot. Northern U. S. ed. 5, p. 610; S. Wats. Bot. Calif. ii. p. 268 (var. *flexuosus*), et in Proc. Am. Acad. xviii. p. 175.
Agrostis cryptandra, Torr. in Ann. Lyc. N. York, i. p. 151.
Vilfa cryptandra, Trin. Agrostidea, i. p. 47.

CANADA and BRITISH COLOMBIA southward to CALIFORNIA, NEW MEXICO, and TEXAS.—NORTH MEXICO, near Landrillera, San Luis Potosi (*Schaffner*).

4. **Sporobolus domingensis,** Kunth, Enum. Pl. i. p. 214; Griseb. Fl. Brit. W. Ind. p. 533; Chapm. Fl. Southern U. S., Suppl. p. 661.
Vilfa domingensis, Trin. in Spreng. Neue Entdeck. ii. p. 59; Sp. Gram. Ic. et Descr. i. t. 24, et Agrostidea, i. p. 41; Fourn. Mex. Pl. Enum., Gram. p. 100 (var. *major*).
Agrostis domingensis, Schult. Mant. iii. p. 570.

FLORIDA.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).—WEST INDIES.

5. **Sporobolus eminens,** Presl, Reliq. Hænk. i. p. 242; Kunth, Enum. Pl. i. p. 216.
Vilfa eminens, Steud. Gram. p. 159; Fourn. Mex. Pl. Enum., Gram. p. 100.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

Fournier also records it from the United States, without any definite locality.

6. **Sporobolus humifusus,** Kunth, Revis. Gram. i. p. 67, et Enum. Pl. i. p. 210.

Vilfa humifusa, H. B. K. Nov. Gen. et Sp. i. p. 137; Trin. Agrostidea, ii. p. 69; Fourn. Mex. Pl. Enum., Gram. p. 97, cum var. *β. major.*

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, near Mexico (*Bourgeau*, 449; *Schaffner*), Cuernavaca (*Schaffner*), Vera Cruz (*Gouin*).

Fournier reduces the Brazilian *Vilfa arguta*, Nees, to this, which Döll (Mart. Fl. Bras. ii. 3, p. 32) retains as a distinct species.

7. **Sporobolus indicus,** R. Br. Prodr. Fl. Nov. Holl. p. 170; Benth. Fl. Austr. vii. p. 622; Griseb. Fl. Brit. W. Ind. p. 533; Hemsl. Bot. Chall. i. 1, p. 79.

Agrostis indica, Linn. Sp. Pl. ed. 2, p. 94.
Sporobolus elongatus, R. Br. loc. cit.
Agrostis elongata, Lam. Ill. i. p. 162.
Sporobolus lamarckii, Desv. in Hamilt. Prodr. Fl. Ind. Occ. p. 4.
Sporobolus tenacissimus, Beauv. Agrostogr. p. 26; Kunth, Enum. Pl. i. p. 211.
Vilfa tenacissima, Trin. Sp. Gram. Ic. et Descr. t. 60, et Agrostidea, i. p. 73; Döll in Mart. Fl. Bras. ii. 3, p. 36; Fourn. Mex. Pl. Enum., Gram. p. 99 (varietates *α*, *β*, et *γ*).
Vilfa rupestris, Trin. Sp. Gram. Ic. et Descr. t. 59.
Sporobolus minor, Kunth, Enum. Pl. i. p. 212.
Vilfa exilis, Trin. Agrostidea, i. p. 67.

Mexico and Central America, common, and generally dispersed in Tropical and Subtropical regions of both hemispheres. Hb. Kew.

8. **Sporobolus minutiflorus,** Link, Hort. Bot. Berol. i. p. 88; Kunth, Enum. Pl. i. p. 214.

Vilfa minutiflora, Trin. Agrostidea, i. p. 63; Döll in Mart. Fl. Bras. ii. 3, p. 31; Fourn. Mex. Pl. Enum., Gram. p. 101, var. *α* et *β*.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Müller*, 2092), Consoquitla (*Liebmann*).—Brazil.

9. **Sporobolus noterophila,** Hemsl.

Vilfa noterophila, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 2), nomen tantum; Fourn. Mex. Pl. Enum., Gram. p. 99, descriptio.

South Mexico, along rivulets, among cactuses, near Tehuacan de las Grandas, 5500 feet (*Galeotti*, 5745). Hb. Kew.

10. **Sporobolus pilifera,** Trin. Gram. Unifl. p. 157, et Sp. Gram. Ic. et Descr. t. 58; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 2); Döll in Mart. Fl. Bras. ii. 3, p. 37; Fourn. Mex. Pl. Enum., Gram. p. 98.

South Mexico, Totula, near Jalapa, 4000 feet (*Galeotti*, 5706), Orizaba (*Bourgeau; Botteri; Schaffner*), Dos Puentes (*Liebmann*).—Brazil; India. Hb. Kew.

11. **Sporobolus plumbeus,** Hemsl.

Vilfa plumbea, Trin. Agrostidea, i. p. 76; Fourn. Mex. Pl. Enum., Gram. p. 101.
Sporobolus depauperatus, Torr. ex Fourn.

Rocky Mountains and Plains.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Mineral del Monte (*Schaffner*), along the canal, near Mericalcingo (*Bourgeau*), Cuernavaca (*Schaffner*).

12. **Sporobolus purpurascens,** Hamilt. Prodr. Fl. Ind. Occ. p. 5; Kunth, Enum. Pl. i. p. 211; Griseb. Fl. Brit. W. Ind. p. 533.

Agrostis purpurascens, Swartz, Prodr. Fl. Ind. Occ. p. 95, et Fl. p. 185; Ch. et Schl. in Linnæa, vi. p. 37.

Vilfa purpurascens, Beauv. Agrostogr. p. 16; Trin. Agrostidea, i. p. 52; Fourn. Mex. Pl. Enum., Gram. p. 98.

South Mexico, Hacienda de la Laguna, near Jalapa (*Schiede & Deppe*), Orizaba (*Müller*, 2116, 2118; *Botteri; Bourgeau*, 2753), Cordova (*Schaffner*).—Brazil; West Indies. Hb. Kew.

Under *Vilfa* Fournier (Mex. Pl. Enum., Gram. p. 98) describes the following proposed new species of this affinity:—*V. grisebachiana* (Orizaba, *Bourgeau*, 32; Cuba, *Wright*, 3427), *V. mülleri* (Orizaba, *Müller*, 2117), and *V. densiflora* (Orizaba, *Botteri*, 139).

13. **Sporobolus ramulosus,** Kunth, Revis. Gram. i. p. 68, et Enum. Pl. i. p. 215.

Vilfa ramulosa, H. B. K. Nov. Gen. et Sp. i. p. 137, et vii. t. 684; Trin. Agrostidea, i. p. 61; Fourn. Mex. Pl. Enum., Gram. p. 101.

Agrostis ramulosa, Rœm. et Schult. ii. p. 361.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Volcan de Jorullo at 2760 feet (*Humboldt & Bonpland*), Desierto Viejo (*Bourgeau*, 1308), San Nicolas, near Mexico (*Bourgeau*, 1028), Orizaba (*Schaffner*). Hb. Kew.

Under the name of *Vilfa confusa,* Fournier, *loc. cit.*, describes an allied species from the same localities, but we have seen none of the specimens he cites. It is characterized as follows:—"Differt a *V. ramulosa* pedicellis linearibus longis flexuosis erectis sub florem incrassatis obconicis, non rigidis brevibus divaricatis æqualiter crassioribus, flore ovali non apice attenuato, glumis æqualibus, palea superiore non mucronata."

14. **Sporobolus repens,** Presl, Reliq. Hænk. i. p. 241; Kunth, Enum. Pl. i. p. 216.

Vilfa repens, Trin. Agrostidea, i. p. 80; Fourn. Mex. Pl. Enum., Gram. p. 101.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Bourgeau*, 3285; *Schaffner; Müller*, 2007), barranca de Tlatengo (*Liebmann*), Rancho del. Valno (*Karwinski*). Also in Bolivia, according to Fournier. Hb. Kew.

15. **Sporobolus virginicus,** Kunth, Revis. Gram. i. p. 67, et Enum. Pl. i. p. 210; Griseb. Fl. Brit. W. Ind. p. 533; Benth. Fl. Austr. vii. p. 621; Hemsl. Bot. Chall. i. p. 80, et ii. p. 131.

Vilfa virginica, Beauv. Agrostogr. p. 26; Trin. Agrostidea, i. p. 48, et Sp. Gram. Ic. et Descr. t. 48; Döll in Mart. Fl. Bras. ii. 3, p. 30; Fourn. Mex. Pl. Enum., Gram. p. 100.

Agrostis virginica, Linn. Sp. Pl. ed. 2, p. 94.
Podosæmum virginicum, Link, Hort. Bot. Berol. i. p. 85.
Calotheca sabulosa, Steud. in Flora, 1829, ii. p. 488.
Agrostis pungens, Pursh, Fl. Am. Sept. i. p. 64, excl. syn. Schreb.
Sporobolus pungens, Kunth, Enum. Pl. i. p. 210, part. nom.

CAROLINA to FLORIDA.—MEXICO and CENTRAL AMERICA, common, and very widely diffused in TROPICAL and SUBTROPICAL REGIONS, especially in maritime districts. Hb. Kew.

[Fournier, *loc. cit.*, describes three other species of *Vilfa* of which we have seen no specimens; they are:—*V. liebmanni* (*Liebmann*, without locality), *V. pubescens* (Cañon de las Minas, *Karwinski*), and *V. sacatilla* (San Luis Potosi, *Virlet d'Aoust*, and Chapultepec, *Schaffner*). *Vilfa orizabæ*, Rupr. in Bull. Acad. Brux. ix. reprint, is a naked name.]

53. EPICAMPES.

Epicampes, Presl, Reliq. Hænk. i. p. 235, t. 39; Benth. et Hook. Gen. Plant. iii. p. 1148.

An exclusively American genus, ranging from California and Mexico to the Andes. Sixteen species have been proposed, but several of them are not, in our opinion, distinguishable as such.

1. **Epicampes berlandieri**, Fourn. Mex. Pl. Enum., Gram. p. 89.

SOUTH MEXICO, the city of Mexico (*Berlandier*, 670), Orizaba (*Müller*, 2130; *Botteri*, 102; *Schaffner*), near Tacubaya (*Schaffner*).

2. **Epicampes bourgæi**, Fourn. Mex. Pl. Enum., Gram. p. 88, cum var. *β. mutica*.

SOUTH MEXICO, Escamala, Orizaba (*Bourgeau*, 2973), Mirador and Tlaltengo (*Liebmann*). Hb. Kew.

This is exceedingly near *E. mutica*, and perhaps, as well as *E. expansa*, should be referred to that species.

3. **Epicampes buchingeri**, Fourn. Mex. Pl. Enum., Gram. p. 88.

SOUTH MEXICO, Orizaba (*Thomas* in herb. Buchinger).

4. **Epicampes expansa**, Fourn. Mex. Pl. Enum., Gram. p. 88.

SOUTH MEXICO, Orizaba (*Botteri*).

5. **Epicampes gigantea**, Fourn. Mex. Pl. Enum., Gram. p. 88.

SOUTH MEXICO, Rio Blanco, near Orizaba (*Bourgeau*, 3137).

We have not seen Bourgeau's number cited for this species, and the description of *E. gigantea*, as of most of the other new ones proposed by Fournier, is limited to two or three lines, so that it is impossible to deal with it without examining the type. The inference is that most of them are founded upon very slender characters, for all the Mexican specimens in the Kew Herbarium are referable to five or six species.

6. **Epicampes lanata,** Presl, Reliq. Hænk. i. p. 235; Kunth, Enum. Pl. i. p. 209; Fourn. Mex. Pl. Enum., Gram. p. 89.

Agrostis lanata, H. B. K. Nov. Gen. et Sp. i. p. 136.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 933; *Schaffner*, 1023); South Mexico, near Villapando, Santa Rosa, and Cerro del Cubilete, between 7800 and 8760 feet (*Humboldt & Bonpland*). Hb. Kew.

As Kunth suggests, this is probably a variety of *E. pubescens.*

7. **Epicampes laxiuscula,** Fourn. Mex. Pl. Enum., Gram. p. 88.

South Mexico, Orizaba (*Botteri; Weber*).

8. **Epicampes macroura,** Benth. in Journ. Linn. Soc. xix. p. 87, et in Benth. et Hook. Gen. Plant. iii. p. 1149.

Cinna macroura, C. setifolia, et *C. stricta,* Kunth, Revis. Gram. i. p. 67, et Enum. i. p. 208; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 4).

Crypsis macroura et *C. stricta,* H. B. K. Nov. Gen. et Sp. i. p. 140.

Crypsis setifolia, Presl, Reliq. Hænk. i. p. 245.

Crypsinna stricta, C. macroura, et *C. setifolia,* Fourn. Mex. Pl. Enum., Gram. p. 90.

North Mexico, region of San Luis Potosi, 6000 to 8000 feet (*Parry & Palmer*, 919, 940; *Virlet d'Aoust*); South Mexico, peak of Orizaba 10,000 to 12,500 feet (*Galeotti*, 5773; *Liebmann*), Montezuma, near Cuantepec (*Bourgeau*, 1151), Desierto Viejo (*Bourgeau*, 1306), mountains of Toluca 10,500 feet (*Humboldt & Bonpland*), Cerro Colorado (*Schiede*); Guatemala, lower part of Volcan de Agua (*Godman & Salvin*).—Colombia, Bolivia. Hb. Kew.

[*Cinna mexicana*, Steud. Gram. p. 182, is an obscure plant.]

9. **Epicampes mutica,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 4), absque descript.; Fourn. Mex. Pl. Enum., Gram. p. 87.

South Mexico, Orizaba (*Botteri; Thomas*), Mirador, Zacuapan, and elsewhere in Vera Cruz at 1000 to 3500 feet (*Galeotti*, 5797).

10. **Epicampes pubescens,** Presl, Reliq. Hænk. i. p. 235; Kunth, Enum. Pl. i. p. 209; Fourn. Mex. Pl. Enum., Gram. p. 89.

Agrostis pubescens, H. B. K. Nov. Gen. et Sp. i. p. 136.

South Mexico.

Collected by Humboldt and Bonpland with *E. lanata,* of which it is probably a variety, for we are unable to refer any specimens to it as different from *E. lanata*; and Fournier did not succeed in finding it in Kunth's herbarium.

11. **Epicampes rigens,** Benth. in Journ. Linn. Soc. xix. p. 88, et in Benth. et Hook. Gen. iii. p. 1149.

Cinna macroura, Thurb. in S. Wats. Bot. Calif. ii. p. 276, non Kunth.

California.—North Mexico, Sonora (*Bolander*). Hb. Kew.

12. **Epicampes stricta,** Presl, Reliq. Hænk. i. p. 235, t. 39; Kunth, Enum. Pl. i. p. 209; Fourn. Mex. Pl. Enum., Gram. p. 89.

Epicampes robusta, Fourn. loc. cit.

Texas; New Mexico.—North Mexico, Sierra Madre (*Seemann*), San Luis Potosi (*Virlet d'Aoust*); South Mexico, above Tacubaya and at Santa Fé and Guadalupe (*Bourgeau*, 536, 683, 1153), Mirador (*Schaffner*), Tanque Colorado (*Karwinski*).—Guatemala, lower part of Volcan de Agua (*Godman & Salvin*). Hb. Kew.

54. BAUCHEA.

Bauchea, Fourn. Mex. Pl. Enum., Gram. p. 87; Benth. et Hook. Gen. Plant. iii. p. 1149.

Limited to the following species, and described as differing from *Epicampes* mainly in the very unequal empty glumes.

1. **Bauchea karwinskii,** Fourn. Mex. Pl. Enum., Gram. p. 87.

South Mexico, Cañon de las Minas and Victoria and Tanquecillas (*Karwinski*).

55. AGROSTIS.

Agrostis, Linn. Gen. Plant. n. 80, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1149.

A genus of nearly 100 species, very widely diffused, yet most numerous in the north temperate regions; a few are almost cosmopolitan. In this, as in other genera, Fournier has founded a number of species on extremely slender characters.

1. **Agrostis berlandieri,** Fourn. Mex. Pl. Enum., Gram. p. 96.

Mexico, Totonilco (*Berlandier*).

2. **Agrostis borealis,** Hartm. Skand. Fl. p. 300; Fourn. Mex. Pl. Enum., Gram. p. 95.

Mexico, without locality (*Liebmann*).—Greenland; Scandinavia.

This species, or form, together with *A. pickeringii*, Tuckerm., is referred by Gray (Man. Bot. Northern U. S. ed. 5, p. 611) to the very widely diffused *A. canina*, Linn. Fournier retains *Agrostis pickeringii* as an independent species, and records it, like the present, from Mexico, *absque loco*, Liebmann.

3. **Agrostis bourgæi,** Fourn. Mex. Pl. Enum., Gram. p. 95.

South Mexico, Pedregal, near Tizapan, in the valley of Mexico (*Bourgeau*, 682).

4. **Agrostis chinantlæ,** Fourn. Mex. Pl. Enum., Gram. p. 96.

South Mexico, Chinantla (*Liebmann*).

We have not determined one of Fournier's new species of this genus; they are nearly all founded on specimens from a single locality.

5. **Agrostis decumbens,** Link, Hort. Bot. Berol. i. p. 80; Fourn. Mex. Pl. Enum., Gram. p. 94.

Trichodium decumbens, Michx. Fl. Bor.-Am. i. p. 42.

South Mexico, Mirador and Dolores (*Liebmann*), Orizaba (*Bourgeau*, 2746).—Eastern States of North America, especially near the sea.

Trinius ('Agrostidea,' ii. p. 79) unites a number of proposed species, including this, under the collective name of *Agrostis michauxii*; but Gray and others regard *A. scabra*, Willd., as distinct; and *A. perennans*, Tuckerm., is the name generally applied by North-American botanists to *Trichodium decumbens*, Michx.

6. **Agrostis ghiesbreghtii,** Fourn. Mex. Pl. Enum., Gram. p. 97.

South Mexico, Oaxaca (*Ghiesbreght*).

[*Agrostis glauca*, Steud. (Gram. p. 175), syn. *Podosæmum glaucum*, Nees ('Linnæa,' xix. p. 689), from Mexico, Aschenborn, is an obscure species.]

[*Agrostis mexicana*, Linn. Mant. p. 31 (syn. *Cinna mexicana*, Lindl., *Trichochloa mexicana*, Trin., *Podosæmum mexicanum*, Link, *Muehlenbergia mexicana*, Trin.), seems to have been erroneously recorded from Mexico, its known range being from North Carolina northward.]

7. **Agrostis schaffneri,** Fourn. Mex. Pl. Enum., Gram. p. 94, cum var. *β. mutica.*

South Mexico, Tacubaya (*Schaffner*).

8. **Agrostis schiedeana,** Fourn. Mex. Pl. Enum., Gram. p. 96.

South Mexico, without locality (*Schaffner; Schiede & Deppe*), Tonaguia (*Liebmann*), Orizaba (*Thomas*).

9. **Agrostis scabra,** Willd. Sp. Pl. i. p. 370; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 611; S. Wats. in Proc. Am. Acad. xviii. p. 176; Thurb. in S. Wats. Bot. Calif. ii. p. 274.

Agrostis laxiflora, Richardson, App. p. 3; Fourn. Mex. Pl. Enum., Gram. p. 94.
Agrostis michauxii, Trin. Agrostidea, ii. p. 79, pro parte.
Trichodium laxiflorum, Michx. Fl. Am.-Bor. i. p. 41, t. 8.
Trichodium montanum, Torr. ex A. Gr.

Canada and Alaska to Florida and California.—South Mexico, Colipa (*Karwinski*).
Siberia.

10. **Agrostis setifolia,** Fourn. Mex. Pl. Enum., Gram. p. 97.

South Mexico, peak of Orizaba at 10,000 feet (*Liebmann*).

11. **Agrostis tacubayensis,** Fourn. Mex. Pl. Enum., Gram. p. 95.

South Mexico, Tacubaya (*Schaffner*).

12. **Agrostis tolucensis,** H. B. K. Nov. Gen. et Sp. i. p. 135; Trin. Agrostidea, ii. p. 95; Fourn. Mex. Pl. Enum., Gram. p. 95, cum var. *β.*

Agrostis virescens, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 3), non H. B. K.
Agraulus mexicanus, Presl, Reliq. Hænk. i. p. 236.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Toluca 7000 to 8000 feet (*Humboldt & Bonpland*), Tacubaya (*Schaffner*), Orizaba 14,000 feet (*Liebmann*), 12,500 feet (*Galeotti*, 5775).

Trinius (*loc. cit.* p. 74) cites *A. tolucensis* as a synonym of *A. virescens*.

13. **Agrostis varians,** Trin. Agrostidea, ii. p. 68; S. Wats. Bot. Calif. ii. p. 273; Fourn. Mem. Pl. Enum., Gram. p. 95.

Agrostis michauxii, var. *alpina,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 2).

Oregon to California.—South Mexico, peak of Orizaba at the limits of phanerogamic vegetation, 12,000 to 12,500 feet (*Galeotti*, 5767; *Liebmann*).

14. **Agrostis verticillata,** Vill. Delph. p. 74; Trin. Sp. Gram. Ic. et Descr. t. 36, et Agrostidea, ii. p. 112; Benth. Pl. Hartw. p. 346; S. Wats. Bot. Calif. ii. p. 272; Fourn. Mex. Pl. Enum., Gram. p. 96.

Agrostis dulcis, Sibth. ex Kunth, Enum. Pl. i. p. 218; Nees in Linnæa, xix. p. 670; Benth. Pl. Hartw. p. 28.

Vilfa dulcis, Beauv. Agrostogr. p. 16; H. B. K. Nov. Gen. et Sp. i. p. 138.

Agrostis vulgaris, γ. *dulcis,* Pers. Syn. Pl. i. p. 75.

Texas to California.—North and South Mexico, common.—Europe; Madeira; Canaries; North Africa; and Western Asia. Hb. Kew.

15. **Agrostis virescens,** H. B. K. Nov. Gen. et Sp. i. p. 135; Trin. Agrostidea, ii. p. 74, excl. syn.; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 3), var. *pumila*; Fourn. Mex. Pl. Enum., Gram. p. 95.

South Mexico, Toluca 7000 to 8000 feet (*Humboldt & Bonpland*), without locality (*Liebmann*), peak of Orizaba, 12,500 feet (*Galeotti*, 5775).

16. **Agrostis virletii,** Fourn. Mex. Pl. Enum., Gram. p. 96 (varietates α, β, et γ).

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Tacubaya and Guazimalpan (*Schaffner*).

56. POLYPOGON.

Polypogon, Desf. Fl. Atl. i. p. 66; Benth. et Hook. Gen. Plant. iii. p. 1150.

About ten species, now very widely dispersed in temperate and subtropical regions, rarer within the tropics. *P. monspeliensis* and some others colonize very freely, especially in maritime districts.

1. **Polypogon brachyphyllus,** Fourn. Mex. Pl. Enum., Gram. p. 91.

Podosæmum brachyphyllum, Nees in Linnæa, xix. p. 690.

Agrostis brachyphylla, Steud. Gram. p. 175.

Mexico, without locality (*Aschenborn*).

2. **Polypogon elongatus,** H. B. K. Nov. Gen. et Sp. i. p. 134; Rupr. in Bull.

Acad. Brux. ix. (reprint, p. 3); Trin. Agrostidea, ii. p. 11; Nees, Agrostol. p. 416; Fourn. Mex. Pl. Enum., Gram. p. 91.

Raspailia agrostoides, Presl, Reliq. Hænk. p. 239, t. 40.

Nowodworskya agrostoides, Presl, loc. cit. p. 351.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, common (*Bourgeau*, 3135, 3329; *Galeotti*, 5760, 5807; *Müller*, 2097).—Colombia to Chili and Buenos Ayres. Hb. Kew.

3. **Polypogon mexicanus**, Schl. Hort. Hal. 1842, ex Steud. Gram. p. 185; Fourn. Mex. Pl. Enum., Gram. p. 92.

South Mexico, Tacubaya (*Schaffner*).

57. ACHÆTA.

Achæta, Fourn. Mex. Pl. Enum., Gram. p. 109; Benth. et Hook. Gen. Plant. iii. p. 1153, sub *Deyeuxia*.

Limited to the following species, which, from the description, Bentham referred to *Deyeuxia*, but we prefer not giving names to them under that genus without seeing them.

1. **Achæta geniculata**, Fourn. Mex. Pl. Enum., Gram. p. 109.

South Mexico, without locality (*Liebmann*).

2. **Achæta plumosa**, Fourn. Mex. Pl. Enum., Gram. p. 109.

South Mexico, peak of Orizaba at 10,000 feet (*Liebmann*).

58. DEYEUXIA.

Deyeuxia, Clarion in Beauv. Agrostogr. p. 43, t. 9. figg. 9 & 10; Benth. et Hook. Gen. Plant. iii. p. 1152.

Lachnagrostis, Trin. Fund. Agrostogr. p. 128, et Sp. Gram. Ic. et Descr. tt. 242 et 243.

A genus of nearly 120 species, very widely dispersed in temperate regions, including mountains within the tropics, and extending into both the north and the south frigid zones; most numerous in the Andes.

1. **Deyeuxia eriantha**, H. B. K. Nov. Gen. et Sp. i. p. 145; Kunth, Enum. Pl. i. p. 240, et Suppl. p. 187; Ch. et Schl. in Linnæa, vi. p. 37; Fourn. Mex. Pl. Enum., Gram. p. 105.

Calamagrostis eriantha, Steud. Gram. p. 190.

South Mexico, mountains between Mexico and Tezcuco at 7000 feet (*Humboldt & Bonpland*), near Jalapa (*Schiede*).

2. **Deyeuxia evoluta**, Fourn. Mex. Pl. Enum., Gram. p. 106.

South Mexico, Mirador (*Liebmann*), Orizaba (*Thomas*), Orizaba at 11,000 feet (*Liebmann*).

3. **Deyeuxia gracilis,** Fourn. Mex. Pl. Enum., Gram. p. 106.

South Mexico, Mirador (*Liebmann*).

"Ambigit inter *Deyeuxiam* et *Trisetum*; glumæ æquilatæ."—*Fournier.*

4. **Deyeuxia junciformis,** H. B. K. Nov. Gen. et Sp. i. p. 143; Kunth, Enum. Pl. i. p. 239, et Suppl. p. 185, t. 14. fig. 3; Fourn. Mex. Pl. Enum., Gram. p. 105.

Calamagrostis junciformis, Steud. Gram. p. 199.

Deschampsia nitida, Presl, Reliq. Hænk. i. p. 251?, ex Fournier.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Toluca 7000 to 8000 feet (*Humboldt & Bonpland*).

5. **Deyeuxia liebmanniana,** Fourn. Mex. Pl. Enum., Gram. p. 106.

South Mexico, peak of Orizaba 14,000 to 15,300 feet (*Liebmann*), Cofre de Perote, near the bare region of lichens, and Tlapocoya (*Hahn*).

["*Apera liebmanni*, Fourn., species Mexicana a nobis non visa, est forte melius *Deyeuxiæ* species," Benth. et Hook. Gen. Plant. iii. p. 1153.]

6. **Deyeuxia orizabæ,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 7); Fourn. Mex. Pl. Enum., Gram. p. 105.

Calamagrostis orizabæ, Steud. Gram. p. 193.

South Mexico, peak of Orizaba in pine- and oak-forests at 11,000 to 12,000 feet (*Galeotti*, 5780). Hb. Kew.

7. **Deyeuxia schaffneri,** Fourn. in Bull. Soc. Bot. France, xxiv. p. 181, et Mex. Pl. Enum., Gram. p. 107.

South Mexico, Orizaba (*Schaffner*).

8. **Deyeuxia schiedeana,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 7); Fourn. Mex. Pl. Enum., Gram. p. 105.

Deyeuxia recta, Ch. et Schl. in Linnæa, vi. p. 37, non H. B. K.

Calamagrostis schiedeana, Steud. Gram. p. 193.

South Mexico, peak of Orizaba at 10,000 to 12,500 feet (*Galeotti*, 5779; *Schiede*; *Liebmann*). Hb. Kew.

9. **Deyeuxia tolucensis,** H. B. K. Nov. Gen. et Sp. i. p. 143; Kunth, Enum. Pl. i. p. 239, et Suppl. p. 185; Peyr. in Linnæa, xxx. p. 4, non Presl, ex. Fourn. Mex. Pl. Enum., Gram. p. 105.

Calamagrostis tolucensis et *C. sesquitriflora,* Steud. Gram. p. 190.

South Mexico, Toluca 8200 feet (*Humboldt & Bonpland*), at 14,000 feet (*Heller*).

10. **Deyeuxia triflora,** Nees in Linnæa, xix. p. 691; Fourn. Mex. Pl. Enum., Gram. p. 106, *cum var. quadriflora.*

Avena deyeuxioides, H. B. K. Nov. Gen. et Sp. i. p. 147, et vii. t. 687.

Trisetum deyeuxioides, Kunth, Revis. Gram. i. p. 102, et Enum. Pl. i. p. 297, et Suppl. p. 251.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, lake Tezcuco

7000 feet (*Humboldt & Bonpland*), near Tacubaya and Chapultepec (*Schaffner*), Orizaba (*Bourgeau*, 217; *Müller*, 2113; *Schaffner*), at 8000 to 10,000 feet (*Liebmann*), Chinantla, Talea, and Sempoaltepec (*Liebmann*). Hb. Kew.

11. **Deyeuxia viridis,** Fourn. in Bull. Soc. Bot. France, xxiv. p. 181, et Mex. Pl. Enum., Gram. p. 105.

Trisetum viride, Kunth, Revis. Gram. i. p. 101; Enum. Pl. i. p. 296, et Suppl. p. 250.
Avena viridis, H. B. K. Nov. Gen. et Sp. i. p. 147.

South Mexico, in the elevated plain between Salamanca and Queretaro, 5400 feet (*Humboldt & Bonpland*).

Tribe IX. AVENEÆ.

Aveneæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1086.

There are twenty-two genera of this tribe, comprising about 300 species, spread over the whole area of the Order. *Danthonia* is the largest genus, numbering about 100 species, very widely dispersed in the temperate and tropical regions of both hemispheres, though it is not, as far as we know, represented within our limits. Six of the genera are monotypic, and three of these endemic in Australia.

59. DESCHAMPSIA.

Deschampsia, Beauv. Agrostogr. p. 91, t. 18. fig. 13; Benth. et Hook. Gen. Plant. iii. p. 1157.

About twenty species, widely dispersed in the temperate and frigid zones of both hemispheres, rarer on the mountains within the tropics. One species, *D. cæspitosa,* covers nearly the whole area of the genus, and may yet be found in Mexico.

1. **Deschampsia kœlerioides,** Benth. et Hook. Gen. Pl. iii. p. 1158.

Aira kœlerioides, Peyr. in Linnæa, xxx. p. 5.
Peyritschia kœlerioides, Fourn. Mex. Pl. Enum., Gram. p. 110.

South Mexico, Toluca at 8800 feet (*Heller*).

60. TRISETUM.

Trisetum, Pers. Syn. Pl. i. p. 97; Benth. et Hook. Gen. Plant. iii. p. 1159.

A genus of nearly fifty species, inhabiting temperate regions of both hemispheres, including mountains within the tropics.

1. **Trisetum bambusiforme,** Fourn. Mex. Pl. Enum., Gram. p. 108.

South Mexico, Desierto Viejo, near Mexico (*Bourgeau*, 1304). Hb. Kew.

2. **Trisetum elongatum,** Kunth, Revis. Gram. i. p. 101; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 7), ex Fourn. Mex. Pl. Enum., Gram. p. 108.

Avena elongata, H. B. K. Nov. Gen. et Sp. i. p. 148.

South Mexico, near Chapultepec 7170 feet (*Humboldt & Bonpland*), near Las Vigas,

Jalapa 6000 to 7000 feet, and near Chapultepec at 7200 feet (*Galeotti*, 5732), Orizaba near perpetual snow (*Schiede*).

3. **Trisetum gracile,** Fourn. Mex. Pl. Enum., Gram. p. 108.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, La Hoya 7000 to 8000 feet (*Liebmann*). Hb. Kew.

4. **Trisetum interruptum,** Fourn. Mex. Pl. Enum., Gram. p. 108.

South Mexico, Vaqueria del Jacal, 10,000 feet, and Chinantla (*Liebmann*).

5. **Trisetum nivosum,** Fourn. Mex. Pl. Enum., Gram. p. 107.

South Mexico, Nevado de Toluca (*Hahn*). Hb. Kew.

Concerning this Fournier says, "Forsan tantum varietas *Triseti tolucensis*;" and we think there is little doubt that *T. tolucensis* and several other proposed species are referable to *T. subspicatum*, a species ranging from the Rocky Mountains through the Andes to Fuegia and the Falkland Islands, and recurring in the mountains of Australia, Tasmania, and New Zealand.

6. **Trisetum paniculatum,** Fourn. Mex. Pl. Enum., Gram. p. 109.

South Mexico, Cumbre de Ixtepec, Sierra de Oaxaca 9000 to 10,000 feet, and Hacienda de Santa Ana (*Liebmann*). Hb. Kew.

7. **Trisetum tolucense,** Kunth, Revis. Gram. i. pp. 101 et 297, t. 60, Enum. Pl. i. p. 296, et Suppl. p. 248; Fourn. Mex. Pl. Enum., Gram. p. 107; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 7).

Avena tolucensis, H. B. K. Nov. Gen. et Sp. i. p. 148.

Trisetum molle, Trin. partim, non *Avena mollis*, Mich. ex Fournier.

South Mexico, near Toluca at 8250 feet (*Humboldt & Bonpland*), peak of Orizaba 11,000 to 12,500 feet (*Galeotti*, 5772), at 14,000 feet (*Liebmann*). Hb. Kew.

8. **Trisetum virletii,** Fourn. Mex. Pl. Enum., Gram. p. 108.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Orizaba (*Müller*, 651), woods of the Desierto Viejo, valley of Mexico (*Bourgeau*, 1149), around Mexico and near Guazimalpan (*Schaffner*). Hb. Kew.

61. AVENA.

Avena, Linn. Gen. Plant. n. 91; Benth. et Hook. Gen. Plant. iii. p. 1160.

Species about forty, mostly inhabiting the temperate regions of the Old World and a few North America. Several annual species are now very widely colonized, as *Avena sterilis*, Linn., and *Avena fatua*, Linn., in many parts of Mexico. *Avena trichopodia*, Presl (Reliq. Hænk. i. p. 254), from Mexico, is an obscure plant.

62. TRISTACHYA.

Tristachya, Nees, Agrostol. Bras. p. 458; Benth. et Hook. Gen. Plant. iii. p. 1161.

About eight species are known, two of which inhabit Tropical America, and the rest Tropical and South Africa and West Asia.

1. **Tristachya leiostachya,** Nees, Agrostol. Bras. p. 459; Kunth, Revis. Gram. ii. t. 140, et Enum. Pl. i. p. 308; Döll in Mart. Fl. Bras. ii. 3, p. 106.

Tristachya mexicana, Kunth, Enum. Pl. i. p. 308, et Suppl. p. 259; Fourn. Mex. Pl. Enum., Gram. p. 111.

Monopogon avenaceus, Presl, Reliq. Hænk. i. p. 325, t. 44.

South Mexico, Villa Alta, Oaxaca (*Liebmann*). Hb. Kew.

Tribe X. CHLORIDEÆ.

Chlorideæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1087.

This Tribe is generally spread, except in the colder regions, though rare in Europe. There are twenty-eight genera, thirteen of which are monotypic, and six of these are African. Altogether only about 150 species are known.

63. MICROCHLOA.

Microchloa, R. Br. Prodr. Fl. Nov. Holl. p. 208; Benth. et Hook. Gen. Plant. iii. p. 1163.

Species three, one widely spread, and the others restricted to Tropical and South Africa.

1. **Microchloa setacea,** R. Br. Prodr. Fl. Nov. Holl. p. 208; H. B. K. Nov. Gen. et Sp. i. p. 84, t. 22; Kunth, Enum. Pl. i. p. 258, et Suppl. p. 201; Peyr. in Linnæa, xxx. p. 5; Fourn. Mex. Pl. Enum., Gram. p. 135; S. Wats. in Proc. Am. Acad. xviii. p. 176.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 970); South Mexico, valley of Mexico (*Bourgeau*, 446), Mirador (*Liebmann*), Vera Cruz to Orizaba (*Müller*, 2077).—Bolivia; Brazil; North Australia; Tropical Africa and Asia. Hb. Kew.

64. CYNODON.

Cynodon, Pers. Syn. Plant. i. p. 85; Benth. et Hook. Gen. Plant. iii. p. 1164.

In addition to the following there are three endemic Australian species.

1. **Cynodon dactylon,** Pers. Syn. Pl. i. p. 85; Döll in Mart. Fl. Bras. ii. 3, p. 77; Griseb. Fl. Brit. W. Ind. p. 540; Benth. Fl. Austr. vii. p. 609; Fourn. Mex. Pl. Enum., Gram. p. 142.

This grass is now common in nearly all Tropical and Subtropical and in some Temperate countries, including Mexico. Hb. Kew.

[*Cynodon erectus*, Presl, Reliq. Hænk. i. p. 290, is probably the same as *Cynodon dactylon*.]

65. CTENIUM.

Ctenium, Panz. in Denkschr. Acad. Sc. Münch. 1813, p. 288, t. 13; Benth. et Hook. Gen. Plant. iii. p. 1165.

Species about seven, four North or South American and three African or Mascarene.

1. **Ctenium planifolium,** Kunth, Enum. Pl. i. p. 275; Fourn. Mex. Pl. Enum., Gram. p. 136.

Campulosus planifolius, Presl, Reliq. Hænk. i. p. 287.

MEXICO, without locality (*Hænke*).

Presl's plant has not been identified by later botanists.

66. CHLORIS.

Chloris, Swartz, Prodr. Fl. Ind. Occ. p. 25, et Fl. Ind. Occ. p. 189, t. 3; Benth. et Hook. Gen. Plant. iii. p. 1165.

About forty known species, generally dispersed in the warmer regions of both hemispheres.

1. **Chloris andropogonoides,** Fourn. Mex. Pl. Enum., Gram. p. 143.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

2. **Chloris anoplia,** Fourn. Mex. Pl. Enum., Gram. p. 143.

Leptochloa anoplia, Nees in Linnæa, xix. p. 691; Steud. Gram. p. 210.
Leptochloa humilis, Nees; Steud. Gram. p. 210.

MEXICO, without locality (*Aschenborn*).

3. **Chloris elegans,** H. B. K. Nov. Gen. et Sp. i. p. 166, t. 49; Kunth, Enum. Pl. i. p. 264, et Suppl. p. 207; Fourn. Mex. Pl. Enum., Gram. p. 143; S. Wats. in Proc Am. Acad. xviii. p. 176.

Chloris alba, Presl, Reliq. Hænk. i. p. 289; Steud. Gram. p. 204.

TEXAS.—NORTH MEXICO, region of San Luis Potosi (*Parry & Palmer*, 961), Parras and in the Morales Mountains (*Schaffner*); SOUTH MEXICO, Guadalupe (*Bourgeau*, 665, 911), near Tacubaya (*Schaffner*), Vera Cruz to Orizaba (*Müller*, 2041), between Mexico and Queretaro (*Humboldt & Bonpland*). Hb. Kew.

4. **Chloris ciliata,** Swartz, Prodr. Fl. Ind. Occ. p. 25, et Fl. Ind. Occ. p. 197; Kunth, Enum. Pl. i. p. 263, et Suppl. p. 207; Presl, Reliq. Hænk. i. p. 289; Griseb. Fl. Brit. W. Ind. p. 539; Döll in Mart. Fl. Bras. ii. 3, p. 66; Fourn. Mex. Pl. Enum., Gram. p. 144.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, near Tacubaya (*Schaffner*), Real del Monte to Zacatecas (*Coulter*, 1629), Papantla (*Liebmann*).—BRAZIL; WEST INDIES. Hb. Kew.

5. **Chloris inermis,** Trin. Gram. Unifl. p. 232; Steud. Gram. p. 206.

Chloris polystachya, Lag. Elench. p. 4.

MEXICO.

6. **Chloris petræa,** Thunb. Fl. Cap. i. p. 409; Spreng. Syst. Veg. i. p. 296; Griseb. Fl. Brit. W. Ind. p. 539.

Eustachys petræa, Desv. Journ. de Bot. i. 1813, p. 69; Nees, Agrostol. Bras. p. 419; Kunth, Enum. Pl. i. p. 262.

Shultesia petræa, Spreng. Pugil. ii. p. 17.

FLORIDA to TEXAS.—NICARAGUA, Chontales (*Tate*).—COLOMBIA to URUGUAY; BERMUDAS; WEST INDIES; SOUTH AFRICA. Hb. Kew.

7. **Chloris radiata,** Swartz, Fl. Ind. Occ. i. p. 201; Griseb. Fl. Brit. W. Ind. p. 539; Döll in Mart. Fl. Bras. ii. 3, p. 63; Kunth, Revis. Gram. ii. t. 179, Enum. Pl. i. p. 265, et Suppl. p. 212.

PANAMA, Empire Station (*S. Hayes,* 238).—COLOMBIA to PERU and BRAZIL, and in the WEST INDIES. Hb. Kew.

8. **Chloris submutica,** H. B. K. Nov. Gen. et Sp. i. p. 167, t. 50; Kunth, Enum. Pl. i. p. 263, et Suppl. p. 206; Nees in Linnæa, xix. p. 291; Peyr. in Linnæa, xxx. p. 5; Fourn. Mex. Pl. Enum., Gram. p. 143; S. Wats. in Proc. Am. Acad. xviii. p. 176.

Eustachys submutica, Rœm. et Schult. Syst. Veg. ii. p. 614.

NORTH MEXICO, San Luis Potosi (*Schaffner,* 1074); SOUTH MEXICO, Chapultepec, Mirador, Tacubaya, San Augustin de las Cuevas (*Schaffner*), near Mexico (*Bourgeau,* 454), near Lake Tezcuco at 6800 feet (*Humboldt & Bonpland*). Hb. Kew.

9. **Chloris virgata,** Swartz, Fl. Ind. Occ. i. p. 203; H. B. K. Nov. Gen. et Sp. i. p. 166; Döll in Mart. Fl. Bras. ii. 3, p. 65, t. 18; Fourn. Mex. Pl. Enum., Gram. p. 143; S. Wats. in Proc. Am. Acad. xviii. p. 176.

Rhabdochloa virgata, Beauv. Agrostogr. p. 84.

Chloris gracilis, Durand, Chlor. p. 10; Presl, Reliq. Hænk. p. 289; Steud. Gram. p. 206.

NORTH MEXICO, region of San Luis Potosi (*Schaffner,* 1072); SOUTH MEXICO, San Cristobal, Orizaba, and San Angel, near Mexico (*Bourgeau,* 445, 3196), between Toluco and Mexico 7200 feet (*Humboldt & Bonpland*), region of Oaxaca (*Liebmann*); GUATEMALA, Dueñas (*Godman & Salvin*).—WEST INDIES to BRAZIL. Hb. Kew.

67. TRICHLORIS.

Trichloris, Fourn. Mex. Pl. Enum., Gram. p. 142; Benth. et Hook. Gen. Plant. iii. p. 1166.

An exclusively American genus of about half a dozen species, ranging from Texas to Brazil.

1. **Trichloris fasciculata,** Fourn. Mex. Pl. Enum., Gram. p. 142.

TEXAS.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

2. **Trichloris pluriflora,** Fourn. Mex. Pl. Enum., Gram. p. 142.
TEXAS.—MEXICO, without locality (*Karwinski*).

68. GYMNOPOGON.

Gymnopogon, Beauv. Agrostogr. p. 41, t. 9. fig. 3; Benth. et Hook. Gen. Plant. iii. p. 1167.

About half a dozen species, one inhabiting Ceylon and the rest North and South America.

1. **Gymnopogon longifolius,** Fourn. Mex. Pl. Enum., Gram. p. 144.
SOUTH MEXICO, Vera Cruz (*Gouin*).

2. **Gymnopogon virletii,** Fourn. Mex. Pl. Enum., Gram. p. 144.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

We have seen neither of the above-named species, and no reference is given to them in the 'Genera Plantarum.' Fournier observes:—"Ambo *Gymnopogones* supra descripti e descriptione typica generis recedunt glumis minoribus quam spicula."

[*Schædonnardus,* a very distinct monotypic genus inhabiting Texas and New Mexico, close on our borders, probably occurs in Mexico.]

69. BOUTELOUA.

Bouteloua, Lag. Varied. Cienc. Liter. y Art. 1805, p. 141, et Elench. p. 5; Benth. et Hook. Gen. Plant. iii. p. 1168.

An exclusively American genus of about twenty-five species, ranging from Illinois to California, Florida, Texas, West Indies, Mexico, and Brazil.

Bentham (in Journ. Linn. Soc. xix. p. 104) reduces *Chondrosium*, Desv., *Atheropogon*, Muehl., *Eutriana*, Trin., *Dinebra*, DC., *Triathera*, Desv., and *Triæna*, H. B. K., &c., to *Bouteloua*, while Fournier retains them all, except *Dinebra*, as independent genera, and describes a number of new species under *Chondrosium* and *Atheropogon*, several of which we have not seen. S. Watson (Proc. Am. Acad. xviii. p. 178) reviews the species of *Bouteloua* in the Gray Herbarium as extended in the 'Genera Plantarum,' but without any reference to Fournier's species, so that without consulting the herbaria Fournier and Watson examined it is almost impossible to harmonize the labours of the two. Under these circumstances, in order to avoid unnecessarily multiplying names, Fournier's unidentified species are enumerated below under the genera to which he refers them.

Pentarrhaphis scabra, H. B. K. Nov. Gen. et Sp. i. p. 178, t. 60 (Kunth, Enum. Pl. i. Suppl. p. 237; Fourn. Mex. Pl. Enum., Gram. p. 142; Benth. et Hook. Gen. Plant. iii. p. 1096), and perhaps also *Pogonopsis tenera*, Presl, Reliq. Hænk. i. p. 333, t. 46 (Benth. et Hook. loc. cit.), are Mexican grasses allied to *Bouteloua*. Fournier suggests that the figure of the former is incorrect; and the latter he doubtingly refers to the Andropogoneæ.

1. **Bouteloua aristidoides,** Griseb. Fl. Brit. W. Ind. p. 537; Thurb. in S. Wats. Bot. Calif. ii. p. 291; Benth. in Journ. Linn. Soc. xix. p. 104; S. Wats. in Proc. Am. Acad. xviii. pp. 178 et 180.

Dinebra aristidoides, H. B. K. Nov. Gen. et Sp. i. p. 171, et vii. t. 695.
Eutriana aristidoides, Kunth, Revis. Gram. i. p. 95, Enum. Pl. i. p. 280, et Suppl. p. 233.
Atheropogon aristidoides, Rœm. et Schult. Syst. Veg. ii. p. 415; Fourn. Mex. Pl. Enum., Gram. p. 139.

New Mexico to Southern California.—North Mexico, Soledad, Coahuila (*Palmer*, 1353), region of San Luis Potosi (*Schaffner*, 1062; *Parry & Palmer*, 941); South Mexico, Toluca at 7000 feet (*Humboldt & Bonpland*), Puerto de Santa Cruz, Oaxaca, "in arena littorali" (*Liebmann*). Hb. Kew.

2. **Bouteloua bromoides,** Lag. Elench. p. 5; S. Wats. in Proc. Am. Acad. xviii. pp. 177 et 179.

Dinebra bromoides, H. B. K. Nov. Gen. et Sp. i. p. 172, t. 51.
Atheropogon bromoides, Rœm. et Schult. Syst. Veg. ii. p. 415; Fourn. Mex. Pl. Enum., Gram. p. 140.
Eutriana bromoides, Kunth, Revis. Gram. i. p. 95, et Enum. Pl. i. Suppl. p. 234.
Atheropogon americanus, Fourn. loc. cit.?
Dinebra repens, H. B. K. Nov. Gen. et Sp. i. p. 172, t. 52.
Atheropogon repens, Rœm. et Schult. Syst. Veg. ii. p. 416; Fourn. loc. cit.
Eutriana repens, Kunth, Revis. Gram. i. p. 95, Enum. Pl. i., Suppl. p. 235; Nees in Seem. Bot. Voy. 'Herald,' p. 225.
Heterostega juncifolia, Desv.; H. B. K. loc. cit. p. 173, t. 54, ex S. Wats. sed vix.
Bouteloua humboldtiana, Griseb. ex S. Wats.
Atheropogon radicosus, Fourn. loc. cit.?

Texas to Arizona.—North Mexico, Caracol Mountains, Coahuila (*Palmer*, 1354), region of San Luis Potosi (*Schaffner*, 1001 to 1003), Vera Cruz (*Galeotti*, 5704), Zocoalco, near Guadalupe, valley of Mexico (*Bourgeau*, 534), Guanaxuato (*Humboldt & Bonpland*), Ocotlan, Ejutla, and Mecoatlan (*Liebmann*); Nicaragua (*Lévy*); Panama (*Seemann*). Hb. Kew.

The synonymy of this and some of the other species is still somewhat involved. We have followed Watson; but there seem to have been two species confused under the names *Dinebra bromoides*, H. B. K., and *Eutriana bromoides*, Trin. (Fund. Agrost. p. 161). Kunth cites the latter as a synonym of *Eutriana juncifolia* and *Atheropogon juncifolius*.

3. **Bouteloua chondrosioides,** Griseb. ex Fourn. Mex. Pl. Enum., Gram. p. 136; S. Wats. in Proc. Am. Acad. xviii. p. 179.

Chondrosium humboldtianum, Kunth, Revis. Gram. i. p. 93, Enum. Pl. i. p. 276, et Suppl. p. 231.
Dinebra chondrosioides, H. B. K. Nov. Gen. et Sp. i. p. 173, t. 53.
Spartina humilis, Willd. ex Trin. Gram. Unifl. p. 164.
Bouteloua ovata, Lag. Elench. p. 5?
Actinochloa ovata, Rœm. et Schult. Syst. Veg. ii. p. 420?

North Mexico, San Luis Potosi (*Virlet d'Aoust*), Valladolid in Michoacan at 6000 feet

(*Humboldt & Bonpland*), valley of Orizaba (*Schaffner*), valley of Oaxaca, near Ejutla (*Liebmann*).

4. **Bouteloua hirsuta,** Lag. Elench. p. 5; S. Wats. in Proc. Am. Acad. xviii. pp. 177 et 178; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 621.

Chondrosium hirtum, H. B. K. Nov. Gen. et Sp. i. p. 176, t. 59; Kunth, Enum. Pl. i. p. 276, et Suppl. p. 231; Fourn. Mex. Pl. Enum., Gram. p. 137.

Actinochloa hirsuta, Rœm. et Schult. Syst. Veg. ii. p. 149.

Chondrosium fœnum, Torr. in Emory's Rep. p. 153, t. 12.

Wisconsin and Illinois to Florida and Texas.—North Mexico, San Luis Potosi (*Schaffner*, 1018; *Parry & Palmer*, 943); South Mexico, between Mexico and Gasave 7000 feet (*Humboldt & Bonpland*), Orizaba (*Schaffner*). Hb. Kew.

5. **Bouteloua oligostachya,** Torr.; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 621; Thurb. in S. Wats. Bot. Calif. ii. p. 291; S. Wats. in Proc. Am. Acad. xviii. p. 177.

Chondrosium oligostachyum, Torr. in Marcy Rep. p. 300.

Atheropogon oligostachyus, Nutt. Gen. i. p. 78.

Chondrosium aschenborinanum, Nees in Linnæa, xix. p. 692; Fourn. Mex. Pl. Enum., Gram. p. 137, fide S. Wats. loc. cit.

Chondrosium gracile, H. B. K. Nov. Gen. et Sp. i. p. 176, t. 58; Nees in Linnæa, xix. p. 692; Peyr. in Linnæa, xxx. p. 5; Fourn. Mex. Pl. Enum., Gram. p. 137?

Actinochloa gracilis, Willd.; Rœm. et Schult. Syst. Veg. ii. p. 418.

Atheropogon gracilis, Spreng. Syst. Veg. i. p. 293.

From the Saskatchewan to California, Arizona, and Texas.—North Mexico, region of San Luis Potosi (*Schaffner*, 1014, 1015; *Parry & Palmer*, 944); South Mexico, without locality (*Coulter*, 1625), Tacubaya (*Schaffner*), Zacoalco near Guadalupe (*Bourgeau*, 448, 666). Hb. Kew.

6. **Bouteloua polystachya,** Torr. in Pacif. Rail. Rep. v. p. 366, t. 10; Thurb. in S. Wats. Bot. Calif. ii. p. 291; S. Wats. in Proc. Am. Acad. xviii. pp. 177 et 179, cum var. *vestita.*

Chondrosium parryi, Fourn. Mex. Pl. Enum., Gram. p. 150.

Chondrosium polystachyum, Benth. Bot. Voy. 'Sulphur,' p. 56.

Chondrosium microstachyum, Fourn. Mex. Pl. Enum., Gram. p. 138?

Southern Utah to Texas and Southern California.—North Mexico, in the Sierra Madre, south of Saltillo (*Palmer*, 1357), region of San Luis Potosi (*Schaffner*, 1017, 1019, 1020; *Parry & Palmer*, 946); South Mexico, valley of Mexico (*Bourgeau*, 667). Hb. Kew.

7. **Bouteloua prostrata,** Lag. Elench. p. 5; S. Wats. in Proc. Am. Acad. xviii. p. 176.

Chondrosium humile, Beauv. Agrostogr. p. 41; H. B. K. Nov. Gen. et Sp. i. p. 175, t. 56; Kunth, Enum. Pl. i. p. 276, et Suppl. p. 229.

Actinochloa prostrata, Rœm. et Schult. Syst. Veg. ii. p. 419.
Actinochloa humilis, Rœm. et Schult. loc. cit. p. 417?
Atheropogon humilis, Spreng. Syst. Veg. i. p. 293?
Chondrosium tenue, var. *β,* Fournier, Mex. Pl. Enum., Gram. p. 138?

New Mexico.—North Mexico, Monclova, Coahuila (*Palmer*, 1358), San Luis Potosi (*Schaffner*).—Colombia; Ecuador. Hb. Kew.

This species and *B. tenuis* seem to have been interchanged by Fournier and Watson. The former regards *B. prostratum* as a variety of *B. tenuis*, and refers Bourgeau's 751 to typical *tenuis*, while the latter treats the two as distinct species, and refers Bourgeau's 751 to *B. prostrata.*

8. **Bouteloua racemosa,** Lag. Elench. p. 5; Benth. in Journ. Linn. Soc. xix. p. 104; S. Wats. in Proc. Am. Acad. xviii. p. 177.
Eutriana curtipendula, Trin. Fund. Agrostogr. p. 161; Kunth, Enum. Pl. i. p. 280.
Chloris curtipendula, Michx. Fl. Bor.-Am. i. p. 59; Jacq. Eclog. Gram. t. 7.
Atheropogon apludioides, Muehlenb.; Willd. Sp. Pl. iv. p. 937.
Bouteloua curtipendula, A. Gr. Man. Bot. Northern U. S. ed. 5, p. 621.
Dinebra curtipendula, DC. Cat. Hort. Monsp. p. 105.
Cynosurus secundus, Pursh. Fl. Am. Sept. ii. p. 728.
Atheropogon curtipendulus, Fourn. Mex. Pl. Enum., Gram. p. 138.
Erucaria glabra, V. Cerv. in La Naturaleza, Nov. 1870, p. 347, e descript. ex Fournier, loc. cit.

New York to Wisconsin and southward to Texas.—North Mexico, San Luis Potosi (*Schaffner*, 1061); South Mexico, Real del Monte (*Coulter*, 1653), region of Orizaba (*Bourgeau*, 2755; *Müller*, 2081), Tacubaya (*Schaffner*), Santa Fé, valley of Mexico (*Bourgeau*, 451), Guanajuato at 7300 feet (*Humboldt & Bonpland*), Tehuacan and Potrero de Consoquitla (*Liebmann*). Hb. Kew.

9. **Bouteloua scorpioides,** Lag. Elench.?; S. Wats. in Proc. Am. Acad. xviii. p. 176.
Chondrosium? scorpioides, Kunth, Revis. Gram. i. p. 94, et Enum. Pl. i. p. 277.
Actinochloa? scorpioides, Rœm. et Schult. Syst. Veg. ii. p. 420.
Atheropogon scorpioides, Spreng. Syst. Veg. i. p. 293.

North Mexico, San Luis Potosi (*Schaffner*, 1010).

This is a very obscure species, and it is quite uncertain whether the North-Mexican specimens are correctly referred to it. Fournier cites the name under *tenuis*, but without the sign of certainty.

10. **Bouteloua tenuis,** S. Wats. in Proc. Am. Acad. xviii. p. 76, vix Griseb. Pl. Lorentz, p. 211, et Symb. Fl. Arg. p. 303.
Chondrosium tenue, Beauv. Agrostogr. p. 41; H. B. K. Nov. Gen. et Sp. i. p. 176, t. 57; Kunth, Enum. Pl. i. p. 276; Fourn. Mex. Pl. Enum., Gram. p. 138, pro parte.
Actinochloa tenuis, Rœm. et Schult. Syst. Veg. ii. p. 418.

North Mexico, San Luis Potosi (*Schaffner*, 1013); South Mexico, near Mexico and San Augustin de las Cuevas at 6950 feet (*Humboldt & Bonpland*). Hb. Kew.

11. **Bouteloua triathera,** Benth. in Journ. Linn. Soc. xix. p. 104, et in Benth. et Hook. Gen. Pl. iii. p. 1169.

Triæna racemosa, H. B. K. Nov. Gen. et Sp. i. p. 178, t. 61; Fourn. Mex. Pl. Enum., Gram. p. 141.
Triathera americana, Desv. Journ. Bot. 1813, i. p. 67; Beauv. Agrostogr. p. 39, t. 9. fig. 4, fide Benth.
Atheropogon triæna, Spreng. Syst. Veg. i. p. 293.
Eutriana triæna, Trin. ex Steud. Gram. p. 216.

SOUTH MEXICO, between Guanajuato and Villalpando 6400 feet (*Humboldt & Bonpland*).—SAN DOMINGO.

[*Triathera gracilis,* Fourn. (Mex. Pl. Enum., Gram. p. 141), from Cuernavaca, Chapulco, and San Lorenzo, near Tehuacan (*Liebmann*), is described as distinct from the present plant.]

12. **Bouteloua trifida,** Thurber, ex S. Wats. in Proc. Am. Acad. xviii. p. 177.

TEXAS; NEW MEXICO.—NORTH MEXICO, Monclova, Coahuila (*Palmer*, 1355), region of San Luis Potosi (*Parry & Palmer*, 945). Hb. Kew.

70. CHONDROSIUM.

Chondrosium, Desv.; Benth. et Hook. Gen. Plant. iii. p. 1168, *sectio Bouteloueæ.*

Species Fournerianæ not identified: see remarks under *Bouteloua,* ante, p. 560.

1. **Chondrosium exile,** Fourn. Mex. Pl. Enum., Gram. p. 137.

MEXICO, without locality (*Berlandier*).

2. **Chondrosium karwinskii,** Fourn. Mex. Pl. Enum., Gram. p. 137.

TEXAS.—SOUTH MEXICO, La Miquiguana (*Karwinski*).

3. **Chondrosium virletii,** Fourn. Mex. Pl. Enum., Gram. p. 136.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

71. ATHEROPOGON.

Atheropogon, Muehlenb.; Benth. et Hook. Gen. Plant. iii. p. 1168, *sectio Bouteloueæ.*

Species Fournerianæ not identified: see remarks under *Bouteloua,* ante, p. 560.

1. **Atheropogon acuminatus,** Fourn. Mex. Pl. Enum., Gram. p. 139.

SOUTH MEXICO, Mirador and Potrero de Consoquitla (*Liebmann*).

2. **Atheropogon filiformis,** Fourn. Mex. Pl. Enum., Gram. p. 140.

SOUTH MEXICO, Hacienda de Naranja (*Karwinksi*), Consoquitla (*Liebmann*).

3. **Atheropogon medius,** Fourn. Mex. Pl. Enum., Gram. p. 139.

SOUTH MEXICO, between San Miguel and Sadani (*Liebmann*), Hacienda del Limon (*Karwinski*).

4. **Atheropogon polymorphus,** Fourn. Mex. Pl. Enum., Gram. p. 141.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

5. **Atheropogon stolonifer,** Fourn. Mex. Pl. Enum., Gram. p. 140.
SOUTH MEXICO, La Parada, Sierra de Oaxaca at 8500 feet (*Liebmann*).

72. ELEUSINE.

Eleusine, Gærtn. Fruct. i. p. 7, t. 1; Benth. et Hook. Gen. Plant. iii. p. 1172.

A genus mainly confined to the warm regions of the Old World, two of the species being also common in America. Many forms have been described as species, but Bentham (*loc. cit.*) says there are scarcely seven distinct ones.

1. **Eleusine ægyptiaca,** Pers. Syn. Pl. i. p. 82; Benth. Fl. Austr. vii. p. 615.
Dactyloctenium ægyptiacum, Willd. Enum. Pl. Hort. Berol. p. 1029; Kunth, Enum. Pl. i. p. 261; Griseb. Fl. Brit. W. Ind. p. 540.
Dactyloctenium mucronatum, Willd. loc. cit.; Fourn. Mex. Pl. Enum., Gram. p. 144; Nees in Seem. Bot. Voy. 'Herald,' p. 225; Döll in Mart. Fl. Bras. ii. 3, p. 87. t. 25.
Dactyloctenium prostratum, Willd. loc. cit.

MEXICO and CENTRAL AMERICA, common, and in almost all WARM COUNTRIES throughout the world, though often only a colonist. Hb. Kew.

2. **Eleusine indica,** Gærtn. Fruct. i. p. 8; Kunth, Enum. Pl. i. p. 272; Griseb. Fl. Brit. W. Ind. p. 540; Trin. Sp. Gram. Ic. et Descr. t. 71; Fourn. Mex. Pl. Enum., Gram. p. 145.
Eleusine scabra, E. inæqualis, E. rigidifolia et *E. gouini,* Fourn. loc. cit. pp. 145 et 146?

MEXICO and CENTRAL AMERICA, common, and in almost all WARM COUNTRIES throughout the world, but in many places only introduced. Hb. Kew.

We have reduced all Fournier's proposed new species of this genus, though we have seen only the two first.

73. LEPTOCHLOA.

Leptochloa, Beauv. Agrostogr. p. 71, t. 15. fig. 1; Benth. et Hook. Gen. Plant. iii. p. 1172.

About a dozen species, scattered over the warmer regions and extending into North America and Extratropical Australia. Fournier's new species are unknown to us.

1. **Leptochloa liebmannii,** Fourn. Mex. Pl. Enum., Gram. p. 147.
SOUTH MEXICO, Antigua (*Liebmann*).

2. **Leptochloa mucronata,** Kunth, Revis. Gram. i. p. 91, et Enum. Pl. i. p. 270; Chapm. Fl. Southern U. S. p. 558; Fourn. Mex. Pl. Enum., Gram. p. 147; S. Wats. in Proc. Am. Acad. xviii. p. 181.
Eleusine mucronata, Michx. Fl. Bor.-Am. i. p. 65.
Leptochloa pellucidula, Steud. Gram. p. 209, ex Griseb. Fl. Brit. W. Ind. p. 537.
Leptochloa filiformis, Presl, Reliq. Hænk. i. p. 288?, vix Rœm. et Schult.

VIRGINIA to ILLINOIS and southward to TEXAS.—NORTH MEXICO, Monclova, Coahuila (*Palmer*, 1364); SOUTH MEXICO, Acapulco (*Thiebaut*), Tuzpango (*Bourgeau*, 2375 in

part), Manantial (*Liebmann*); GUATEMALA, Mazatenango (*Bernoulli*, 529); NICARAGUA (*Lévy*, 99).—VENEZUELA; WEST INDIES. Hb. Kew.

3. **Leptochloa paniculata,** Fourn. in Bull. Soc. Bot. France, xxvii. p. 296.
NICARAGUA, without locality (*Lévy*, 1079).

4. **Leptochloa stricta,** Fourn. Mex. Pl. Enum., Gram. p. 147.
SOUTH MEXICO, Vera Cruz (*Gouin*).

5. **Leptochloa virgata,** Beauv. Agrostogr. p. 71; Döll in Mart. Fl. Bras. ii. 3, p. 90; Fourn. Mex. Pl. Enum., Gram. p. 146, var. α, β, et γ.
Cynosurus virgatus, Linn. Sp. Pl. ed. 2, p. 106.
Festuca virgata, Lam. Ill. i. p. 189.
Eleusine virgata, Pers. Syn. Pl. i. p. 57; Spreng. Syst. Veg, i. p. 350.
Chloris polystachya, Lag. Elench. p. 4.
Chloris poæformis, H. B. K. Nov. Gen. et Sp. i. p. 169.
Cynosurus domingensis, Swartz, Obs. p. 40.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Colipa (*Karwinski*), Orizaba (*Müller*, 2022 in part), Tuzpango (*Bourgeau*, 2375 in part), Vera Cruz (*Gouin*), Jicaltepec and Huitamalco (*Liebmann*); GUATEMALA, San Gerónimo (*Salvin & Godman*); NICARAGUA, neighbourhood of Granada (*Lévy*, 173); PANAMA, Rio Grande station (*S. Hayes*, 294).—COLOMBIA to BRAZIL and in the WEST INDIES. Hb. Kew.

6. **Leptochloa virletii,** Fourn. Mex. Pl. Enum., Gram. p. 147.
NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

74. BUCHLOË.

Buchloë, Engelm. in Trans. Acad. Sc. St. Louis, 1859, p. 432, tt. 12 et 14; Benth. et Hook. Gen. Plant. iii. p. 1173.

A monotypic dicœcious (or monœcious) genus.

1. **Buchloë dactyloides,** Engelm. in Trans. Acad. Sc. St. Louis, 1859, p. 432, tt. 12 et 14; Fourn. in Bull. Soc. Bot. Belg. xv. p. 473, et Mex. Pl. Enum., Gram. p. 135; S. Wats. in Proc. Am. Acad. xviii. p. 178.
Sesleria dactyloides, Nutt. Gen. N. Am. Pl. i. p. 65; Kunth, Enum. Pl. i. p. 323; Torr. Bot. Emory Rep. t. 10.
Calanthera dactyloides, Kunth in Hook. Kew Journ. Bot. viii. (1856), p. 18.
Lasiostega humilis, Rupr. ex Munro in Benth. Pl. Hartw. p. 347.
Triodia sp., Benth. Pl. Hartw. p. 28.
Anthephora axilliflora, Steud. Gram. ex Fournier.

OREGON and MISSOURI to NEW MEXICO and TEXAS.—NORTH MEXICO, region of San Luis Potosi (*Schaffner*, 1021; *Parry & Palmer*, 922, 953); SOUTH MEXICO, Aguas Calientes (*Hartweg*, 250), Real del Monte (*Coulter*, 1664), Cerro de los Baños (*Bourgeau*, 440), Orizaba (*Schaffner*). Hb. Kew.

75. JOUVEA.

Jouvea, Fourn. in Bull. Soc. Bot. Belg. xv. p. 475; Benth. et Hook. Gen. Plant. iii. p. 1173.

A dicœcious monotype.

1. **Jouvea straminea,** Fourn. in Bull. Soc. Bot. Belg. xv. p. 475, et Mex. Pl. Enum., Gram. p. 68.

South Mexico, on the sea-sand of the Pacific at San Augustin (*Liebmann*).

76. OPIZIA.

Opizia, Presl, Reliq. Hænk. i. p. 293, t. 41. fig. 1 ad 11; Benth. et Hook. Gen. Plant. iii. p. 1173.

A monœcious or dicœcious monotype.

1. **Opizia stolonifera,** Presl, Reliq. Hænk. i. p. 293; Steud. Gram. p. 214; Fourn. Mex. Pl. Enum., Gram. p. 135.

Casiostega anomala, Rupr. in Bull. Soc. Bot. Belg. ix. (reprint, p. 6), ex Fournier.

South Mexico, sand-hills of Vera Cruz (*Galeotti*, 5703; *Gouin*), Oaxaca (*Liebmann*), Acapulco (*Hænke*), La Parada in the Sierra de Oaxaca at 8500 feet, Ocotlan in the valley of Oaxaca, and in fields around the Hacienda de Buenavista (*Liebmann*). Hb. Kew.

Tribe XI. FESTUCEÆ.

Festuceæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1089.

As understood by Bentham and Hooker, this is a large tribe, comprising sixty-nine genera and nearly 500 species. A very large proportion of the genera are small; no fewer than twenty-seven being monotypic, and fifty-five out of the total have six or fewer species. The bulk of the species belong to the genera *Eragrostis*, *Poa*, *Festuca*, and *Bromus*. There are eight subtribes, namely, Pappophoreæ, Triodieæ, Arundineæ, Seslerieæ, Eragrosteæ, Meliceæ, Centotheceæ, and Eufestuceæ, some of which are ranked as independent tribes by other agrostologists. The Festuceæ are spread over the whole area of the Order.

77. PAPPOPHORUM.

Pappophorum, Schreb. Gen. Plant. p. 787; Benth. et Hook. Gen. Plant. iii. p. 1174.

About twenty species, widely dispersed in the warmer regions of both hemispheres. We have seen only three Mexican species of the genus, and it is probable that the two proposed new ones in Fournier's 'Enumeratio' are the same as those previously published by Munro and Watson.

1. **Pappophorum apertum,** Munro ex Scribner in Bull. Torr. Club, ix. p. 148; S. Wats. in Proc. Am. Acad. xviii. p. 180.

Texas to Arizona.—North Mexico, at Parras and Monclova, Coahuila (*Palmer*, 1360, 1362). Hb. Kew.

2. **Pappophorum bicolor,** Fourn. Mex. Pl. Enum., Gram. p. 133.

South Mexico, Cerro de las Minas and Toluca (*Karwinski*).

3. **Pappophorum laguroideum,** Schrad. in Rœm. et Schult. Mant. ii. p. 342; Döll in Mart. Fl. Bras. ii. 3, p. 59; Fourn. Mex. Pl. Enum., Gram. p. 133.

South Mexico, Colipa (*Karwinski*), Pas de Doña Juana, and Quiotepec (*Liebmann*).—Martinique and Brazil to Uruguay. Hb. Kew.

Grisebach (Fl. Brit. W. Ind. p. 537) combines this with *P. alopecuroides*, Vahl, the only species he records from the British West Indies, and he cites plates 131 and 132 of Kunth's 'Revisio' as also belonging to it, while Nees and Döll retain *P. laguroideum* as an independent species more from want of evidence to the contrary than anything else. A revision of the whole genus would doubtless lead to a considerable reduction of the proposed species. Bentham (MSS. in Herb. Kew) has named Watson's *P. wrightii*, *P. pallida*, R. Br. var. ?, and Scribner (Bull. Torr. Club, ix. p. 148) seems to have held the same view.

4. **Pappophorum mexicanum,** Griseb. ex Fourn. Mex. Pl. Enum., Gram. p. 133.

South Mexico, valley of Mexico (*Bourgeau; Schaffner*).

5. **Pappophorum wrightii,** S. Wats. in Proc. Am. Acad. xviii. p. 178.

Texas; New Mexico.—North Mexico, Parras (*Palmer*, 1361), region of San Luis Potosi (*Parry & Palmer*, 947); South Mexico, valley of Mexico (*Schaffner*). Hb. Kew.

Torrey (in Pacific Railr. Rep. iv. p. 155) refers the Texan and New-Mexican specimens to *P. boreale*, Griseb. Respecting other conflicting views, see the remarks under *P. laguroideum*.

[*Cottea pappophoroides*, Kunth (Revis. Gram. i. t. 52), a very distinct grass of this affinity found in Texas, on the coast of Peru and in Tucuman, probably occurs within our limits.]

78. TRIODIA.

Triodia, R. Br. Prodr. Fl. Nov. Holl. p. 182; Benth. et Hook. Gen. Plant. iii. p. 1175.

There are upwards of twenty species in Europe, North and South America, South Africa, Australia, and New Zealand.

1. **Triodia avenacea,** H. B. K. Nov. Gen. et Sp. i. p. 156, t. 48.

Uralepis avenacea, Kunth, Revis. Gram. i. p. 108, et Enum. Pl. i. p. 318; Nees in Linnæa, xix. p. 693; Fourn. Mex. Pl. Enum., Gram. p. 110; S. Wats. in Proc. Am. Acad. xviii. p. 180.
Kœlera avenacea, Spreng. Syst. Veg. i. p. 332.

North Mexico, San Luis Potosi (*Schaffner*, 1008, 1009; *Palmer*, 950); South Mexico, Tacubaya (*Schaffner*), Guadalupe, valley of Mexico (*Bourgeau*, 678), Chapultepec and Peñol de los Baños 7150 feet (*Humboldt & Bonpland*). Hb. Kew.

2. **Triodia mutica,** Benth. ex S. Wats. in Proc. Am. Acad. xviii. p. 180.

Uralepis mutica, Fourn. Mex. Pl. Enum., Gram. p. 110?

Tricuspis mutica, Torr. in Rep. Bot. Whipple's Exped. p. 100.

Texas; New Mexico.—North Mexico, mountains west of Saltillo (*Palmer*, 2020). Hb. Kew.

3. **Triodia pulchella,** H. B. K. Nov. Gen. et Sp. i. p. 155, t. 47; S. Wats. in Proc. Am. Acad. xviii. p. 180.

Tricuspis pulchella, Torr. Rep. Bot. Whipple's Exped. p. 100.

Uralepis pulchella, Kunth, Revis. Gram. i. p. 108, et Enum. Pl. i. p. 318; Nees in Linnæa, xix. p. 693; Fourn. Mex. Pl. Enum., Gram. p. 110.

Southern Utah to New Mexico and Texas.—North Mexico, Parras, Coahuila (*Palmer*, 1359), region of San Luis Potosi (*Parry & Palmer*, 951; *Schaffner* 1007); South Mexico, between Guanajuato and Mina de Belgrado 6300 feet (*Humboldt & Bonpland*), Guadalupe, valley of Mexico (*Bourgeau*, 664), Mirador (*Schaffner*). Hb. Kew.

4. **Triodia schaffneri,** S. Wats. in Proc. Am. Acad. xviii. p. 181.

North Mexico, in the Escabrillos mountains, San Luis Potosi (*Schaffner*, 1077). Hb. Kew.

5. **Triodia texana,** S. Wats. in Proc. Am. Acad. xviii. p. 180.

Texas; New Mexico.—North Mexico, Monclova, Coahuila (*Palmer*, 1371). Hb. Kew.

79. DIPLACHNE.

Diplachne, Beauv. Agrostogr. p. 80, t. 16. fig. 9; Benth. et Hook. Gen. Plant. iii. p. 1176.

About fourteen species, scattered over the warmer regions of both hemispheres.

1. **Diplachne dubia,** Benth. ex S. Wats. in Proc. Am. Acad. xviii. p. 181; Vasey, Grasses U. S. p. 35.

Leptochloa dubia, Nees, Agrostol. Bras. p. 433; Kunth, Enum. Pl. i. p. 271; Chapm. Fl. Southern U. S. p. 559; Fourn. Mex. Pl. Enum., Gram. p. 147.

Chloris dubia, H. B. K. Nov. Gen. et Sp. i. p. 169, et vii. t. 694.

Festuca obtusiflora, Willd.; Spreng. Syst. Veg. i. p. 356.

Florida; Texas; New Mexico.—North Mexico, San Luis Potosi (*Schaffner*, 1079); South Mexico, Mirador (*Schaffner*), Guadalupe, valley of Mexico (*Bourgeau*, 533), San Felipe de Agua, Oaxaca (*Liebmann*), El Peñon, valley of Mexico, between 6000 and 7000 feet (*Humboldt & Bonpland*). Hb. Kew.

2. **Diplachne fascicularis,** Beauv. Agrostogr. p. 80, t. 16. fig. 9; S. Wats. in Proc. Am. Acad. xviii. p. 181; Fourn. Mex. Pl. Enum., Gram. p. 148.

Festuca fascicularis, Lam. Ill. i. p. 189.

Leptochloa polystachya, Kunth, Revis. Gram. i. p. 91, et Enum. Pl. i. p. 271.

Leptochloa fascicularis, A. Gr. Man. Bot. Northern U. S. ed. 5, p. 623.

RHODE ISLAND and ILLINOIS southward.—NORTH MEXICO, San Luis Potosi (*Schaffner*, 1048); SOUTH MEXICO, Mirador (*Schaffner*). Hb. Kew.

3. **Diplachne patens,** Fourn. Mex. Pl. Enum., Gram. p. 148.

SOUTH MEXICO, Vera Cruz (*Gouin*).

80. SCLEROPOGON.

Scleropogon, Philippi in Sert. Mendoc. ii. p. 47; Benth. et Hook. Gen. Plant. iii. p. 1177.

Apparently monotypical, though Bentham and Hooker give the number of species as four: one "Chilian" and the rest Mexican.

1. **Scleropogon brevifolius,** Philippi in Sert. Mendoc. ii. 1871, p. 47. (Tab. CI.)

Tricuspis monstra, Munro; Hemsl. Diag. Pl. Nov. Mex. p. 56.

Lesourdia karwinskyana et *L. multiflora,* Fourn. in Bull. Soc. Bot. France, xxvii. 1880, p. 102, tt. 3 et 4, et Mex. Pl. Enum., Gram. pp. 133 et 134.

Scleropogon karwinskianus, "Benth."; S. Wats. in Proc. Am. Acad. xviii. p. 181.

NEW MEXICO.—NORTH MEXICO, San Luis Potosi and Morales (*Schaffner*, 1005, 1006), region of San Luis Potosi (*Parry & Palmer*, 925, 949); SOUTH MEXICO, Tampico (*herb. Uzac*), cañon de las Minas (*Karwinski*).—MENDOZA. Hb. Kew.

After comparing the Mendoza specimen with the Mexican we are convinced that they are of the same species, and the late General Munro identified Parry and Palmer's specimens with an authentic one from Dr. Philippi. As to the specimens from the Texano-Mexican region, neither Munro nor Watson recognized more than one species.

EXPLANATION OF TAB. CI.

Fig. 1, portion of a female spikelet with the awns cut off; 2, pale and pistil; 3, pale; 4, ovary; 5, a male flower; 6, stamens and lodicules; 7, one of the lodicules: all the figures more or less enlarged.

81. CALAMOCHLOA.

Calamochloa, Fourn. in Bull. Soc. Bot. France, xxiv. p. 178; Benth. et Hook. Gen. Plant. iii. p. 1178.

A monotype.

Mr. Bentham failed to identify this genus from Fournier's description, and we have been equally unsuccessful; but judging from the locality recorded, we think it probable that it may have been described before.

1. **Calamochloa filifolia,** Fourn. in Bull. Soc. Bot. France, xxiv. p. 178, et Mex. Pl. Enum., Gram. p. 102.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*).

82. GYNERIUM.

Gynerium, Humb. et Bonpl. Pl. Æquin. ii. p. 112; Benth. et Hook. Gen. Plant. iii. p. 1178.

An exclusively American genus of three species, inhabiting the warmer regions.

1. **Gynerium saccharoides,** Humb. et Bonpl. Pl. Æquin. ii. p. 112, t. 115; Döll in Mart. Fl. Bras. ii. 3, p. 50; Fourn. Mex. Pl. Enum., Gram. p. 103.

Arundo saccharoides, Griseb. Fl. Brit. W. Ind. p. 530.

Gyneria sagittata, Beauv. Agrostogr. p. 138.

Arundo sagittata, Pers. Syn. Pl. i. p. 102.

Saccharum sagittatum, Aubl. Pl. Guian. i. p. 50.

South Mexico, Trapiche de la Concepcion, Oaxaca (*Liebmann*), Jicaltepec (*Karwinski*), Pital (*Liebmann*); Nicaragua (*Lévy*); Panama, Rio Grande swamp (*S. Hayes,* 82).—Colombia to Guiana and Brazil, and in the West Indies. Hb. Kew.

83. ARUNDO.

Arundo, Linn. Gen. Plant. n. 93, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1179.

Of this genus about seven species are known, one (or two very closely allied) of which is very widely diffused in the Mediterranean region, India, and the warmer parts of America; one is peculiar to the Mediterranean region; one inhabits India, the Malayan Archipelago, and Madagascar; two (or varieties of one) are endemic in New Zealand, and two or three in Andine and Antarctic America.

1. **Arundo donax,** Linn. Sp. Pl. ed. 1, p. 81; Döll in Mart. Fl. Bras. ii. 3, p. 47, t. 13; Griseb. Fl. Brit. W. Ind. p. 530; S. Wats. in Proc. Am. Acad. xviii. p. 181; Fourn. Mex. Pl. Enum., Gram. p. 104; Vasey, Grasses U. S. p. 36.

Donax arundinaceus, Beauv. Agrostogr. t. 16. fig. 4.

North Mexico, Monclova, Coahuila (*Palmer,* 1345); South Mexico, San Juan de Ulloa and Sacrificios, Vera Cruz (*Gouin*).—West Indies; South America; Mediterranean region to China and Japan. Hb. Kew.

Vasey records this grass from "river banks, Mexican border," without further remark; but both Grisebach and Döll question its being indigenous in America.

84. PHRAGMITES.

Phragmites, Trin. Fund. Agrostogr. p. 134, pro parte; Benth. et Hook. Gen. Plant. iii. p. 1179.

Species two, very widely diffused in the temperate and subtropical regions of both hemispheres; rarer within the tropics.

1. **Phragmites communis,** Trin. Fund. Agrostogr. p. 134; Kunth, Enum. Pl. i. p. 251; Vasey, Grasses U. S. p. 36.

Arundo phragmites, Linn. Sp. Pl. ed. 1, p. 81.

Phragmites berlandieri, Fourn. in Bull. Soc. Bot. France, xxiv. p. 178, et Mex. Pl. Enum., Gram. p. 103.

This is perhaps the most widely diffused of the larger reed-grasses, and is common in Mexico and Central America.

[*Phragmites martinicensis*, Trin., syn. *Arundo occidentalis*, Sieb., a variety of *P. communis*, or a closely allied species, is recorded by Grisebach (Fl. Brit. W. Ind. p. 530) from Mexico.]

85. MONANTHOCHLOE.

Monanthochloe, Engelm. in Trans. Acad. Sc. St. Louis, 1857, p. 436; Benth. et Hook. Gen. Plant. iii. p. 1180.

A monotype.

1. **Monanthochloe littoralis**, Engelm. in Trans. Acad. St. Louis, 1859, p. 436, tt. 13 et 14; Vasey, Grasses U. S. p. 36.

FLORIDA; TEXAS; SOUTH CALIFORNIA.—NORTH MEXICO, region of Matamoras (*Berlandier*, 3227). Hb. Kew.

It is a little uncertain whether this remarkable littoral grass has been collected in Mexico proper; but we include it, as Matamoras itself is south of the Rio Grande.

[*Munroa squarrosa*, Torr. (Bot. Whipple's Exped. p. 102, errore *Monroa*), found in Texas, New Mexico, and Colorado, is another very distinct and remarkable grass which may be expected to occur within our northern limits.]

86. DISSANTHELIUM.

Dissanthelium, Trin. in Linnæa, x. p. 305; Benth. et Hook. Gen. Plant. iii. p. 1185.

Two or three species, inhabiting Andine America from Bolivia to California.

1. **Dissanthelium sclerochloides**, Fourn. Pl. Enum., Gram. p. 112.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Nevada de Toluca (*Hahn*).—CHILI.

87. ERAGROSTIS.

Eragrostis, Beauv. Agrostogr. p. 70, t. 14. fig. 11; Benth. et Hook. Gen. Plant. iii. p. 1186.

This genus comprises about 100 species, very widely spread in tropical and temperate regions; two or three of them are almost everywhere in the warm regions. In this, as in many other genera, Fournier has made a number of new species, which we have not seen.

1. **Eragrostis acutiflora**, Nees, Agrostol. Bras. p. 501; Döll in Mart. Fl. Bras. ii. 3, p. 145; Nees in Seem. Bot. Voy. 'Herald,' p. 225.

Poa acutiflora, H. B. K. Nov. Gen. et Sp. i. p. 161.

Megastachya acutiflora, Rœm. et Schult. Syst. Veg. ii. p. 588.

PANAMA, near the city of Panama (*Seemann*, 119).—COLOMBIA to BRAZIL. Hb. Kew.

2. **Eragrostis amœna**, Presl, Reliq. Hænk. i. p. 275; Steud. Gram. p. 277?

Poa hænkei, Kunth, Enum. Pl. i. p. 343?

Megastachya amœna, Fourn. Mex. Pl. Enum., Gram. p. 118.

South Mexico, Potrero de San Sebastian (*Liebmann*), El Estero (*Schiede*), Cordova (*Bourgeau*).

3. **Eragrostis capillaris,** Nees, Agrostol. Bras. p. 505; Steud. Gram. p. 273; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 632; Döll in Mart. Fl. Bras. ii. 3, p. 139; Fourn. Mex. Pl. Enum., Gram. p. 114.

Poa capillaris, Linn. Sp. Pl. ed. 1. p. 68, ed. 2. p. 100.

Eragrostis lugens, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 9).

Virginia? and Illinois southward.—Mexico and Central America, common.—Colombia to Brazil and in the West Indies. Hb. Kew.

4. **Eragrostis caudata,** Fourn. Mex. Pl. Enum., Gram. p. 115.

Mexico, without locality (*Berlandier*, 2345), Consoquitla (*Liebmann*).

5. **Eragrostis ciliaris,** Link, Hortus Berol. i. p. 192; Griseb. Fl. Brit. W. Ind. p. 532; Chapm. Fl. Southern U. S. p. 563.

Poa ciliaris, Linn. in Elmgren, Pl. Jam. Pug. p. 13; Sp. Pl. ed. 2, p. 102; H. B. K. Nov. Gen. et Sp. i. p. 162; Ch. et Schl. in Linnæa, vi. p. 38; Fourn. Mex. Pl. Enum., Gram. p. 113.

South Carolina to Florida and Texas.—Mexico to Panama, common.—Tropical South America; Galapagos; West Indies; Tropical Africa and Asia. Hb. Kew.

6. **Eragrostis excelsa,** Griseb. Cat. Pl. Cub. p. 227; Fourn. Mex. Pl. Enum., Gram. p. 117.

South Mexico, Vera Cruz (*Gouin*).—Cuba.

[*Eragrostris fendleriana,* Steud. (Gram. p. 278), a New Mexican grass, is erroneously recorded from Mexico.]

7. **Eragrostis glumacea,** Fourn. Mex. Pl. Enum., Gram. p. 117, cum var. *pauciflora.*

South Mexico, Vera Cruz (*Gouin*).

8. **Eragrostis hirta,** Fourn. Mex. Pl. Enum., Gram. p. 115.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

9. **Eragrostis limbata,** Fourn. Mex. Pl. Enum., Gram. p. 116, varietates α et β.

Eragrostis tephrosanthos, Steud. Gram. p. 278, partim ex Fourn.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Santa Fé, valley of Mexico (*Bourgeau*, 227, 437, 1305), Orizaba (*Botteri*, 1270; *Bourgeau*, 2635), Vera Cruz (*Gouin*). Hb. Kew.

In a broad sense this is a form of *E. poæoides.*

10. **Eragrostis lugens,** Nees, fide S. Wats. in Proc. Am. Acad. xviii. p. 182.

Texas to Arizona.—North Mexico, San Luis Potosi (*Parry & Palmer*, 938; *Schaffner*, 1026). Brazil.

Döll (Mart. Fl. Bras. ii. 3, p. 141) has the following observations on this species and

its nearest allies:—"*Poa hirsuta*, Michaux, imprimis culmo robustiore, panicula ampliore atque spiculis majoribus, 5–12-floris differt. Ceterum *Eragrostis hirsuta*, *E. polytricha*, et *E. lugens*, maxime sibi affines."

11. **Eragrostis maxima,** Fourn. Mex. Pl. Enum., Gram. p. 114.

South Mexico, San Juan de Ulloa, Vera Cruz (*Gouin*), San Augustin, Oaxaca (*Liebmann*).—San Domingo.

"Differt ab *E. domingensi*, Steud. Gram. p. 278, foliis non late linearibus scabriusculis, sed angustis glabris" (*Fournier*).

12. **Eragrostis maypurensis,** Steud. Gram. p. 276; Döll in Mart. Fl. Bras. ii. 3, p. 153.

Eragrostis panamensis, Presl, Reliq. Hænk. i. p. 277.
Poa maypurensis, H. B. K. Nov. Gen. et Sp. i. p. 161; Kunth, Revis. Gram. t. 183.
Megastachya panamensis, Fourn. Mex. Pl. Enum., Gram. n. 118.
Festuca pilosa, Willd. in Spreng. Syst. Veg. i. p. 356.

South Mexico, Gualulu (*Liebmann*); Panama (*Hænke*).—North Brazil.

13. **Eragrostis mexicana,** Link, Hort. Berol. i. p. 190; Nees, Agrostol. Bras. p. 503; Döll in Mart. Fl. Bras. ii. 3, p. 143; Fourn. Mex. Pl. Enum., Gram. p. 114.

Poa mexicana, Lag. Elench. p. 3; Ch. et Schl. in Linnæa, vi. p. 38.

South Mexico, Hacienda de la Laguna (*Schiede & Deppe*), Rio Blanco, near Orizaba (*Schaffner*), Mexico (*Bourgeau*, 1031).—Guiana; Brazil. Hb. Kew.

This species is very variously limited by different authors. Nees refers to it *Poa polymorpha*, R. Br., a very common Old-World species, and *Poa patula*, H. B. K., an Andine species; while Trinius reduces *Eragrostis mexicana*, Link, to *E. pilosa*, Beauv.

Watson (Proc. Am. Acad. xviii. p. 182) refers a number of specimens from North Mexico and New Mexico to this species.

14. **Eragrostis montufari,** Steud. Gram. p. 275; Fourn. Mex. Pl. Enum., Gram. p. 117.

Poa montufari, H. B. K. Nov. Gen. et Sp. i. p. 159.
Megastachya montufari, Rœm. et Schult. Syst. Veg. ii. p. 586.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).—South Mexico, Orizaba (*Schaffner*), Vera Cruz (*Gouin*), without locality (*Humboldt & Bonpland*).—Ecuador.

[*Megastachya panicoides*, Presl (Reliq. Hænk. i. p. 283), *Poa panicoides*, Kunth (Enum. Pl. i. p. 343), from Acapulco, has not been identified.]

15. **Eragrostis oxylepis,** Torr. in Rep. Bot. Whipple's Exped. p. 156; Vasey, Grasses U. S. p. 38.

Poa oxylepis, Torr. in Marcy's Rep. p. 301, t. 19 (*P. interrupta* in tab.).
Megastachya oxylepis, Fourn. Mex. Pl. Enum., Gram. p. 118, cum β. *capitata.*
Eragrostis veræ-crucis, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 9).

Texas; Arkansas; New Mexico.—South Mexico, Vera Cruz (*Galeotti*, 5705; *Gouin*, 87), La Galera (*Liebmann*).

16. **Eragrostis palmeri,** S. Wats. in Proc. Am. Acad. xviii. p. 182.
North Mexico, Juraz on the Sabinas River, Coahuila (*Palmer*, 1368). Hb. Kew.

17. **Eragrostis pauciflora,** Trin. ex Fourn. Mex. Pl. Enum., Gram. p. 117.
North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, near Orizaba (*Schaffner; Thomas*), around Mexico (*Berlandier*, 843).

18. **Eragrostis pectinacea,** Steud. Gram. p. 272; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 632; Fourn. Mex. Pl. Enum., Gram. p. 114.
Eragrostis unionis et *U. cognata,* Steud. loc. cit. p. 273.
Poa pectinacea, Michx. Fl. Bor.-Am. i. p. 69.
Massachusetts, Ohio, and Illinois southward.—South Mexico, Vera Cruz (*Gouin*).

19. **Eragrostis pilosa,** Beauv. Agrostogr. p. 71; Döll in Mart. Fl. Bras. ii. p. 141, t. 42; Benth. Fl. Austr. vii. p. 645; Griseb. Fl. Brit. W. Ind. p. 532; Fourn. Mex. Pl. Enum., Gram. p. 117.
This is very widely spread in warm countries of both hemispheres, including Mexico and Central America. Hb. Kew.
Vasey (Grasses U.S. p. 38) treats it as an introduced plant north of Mexico.

20. **Eragrostis poæoides,** Beauv. Agrostogr. p. 162, t. 14. fig. 11; Döll in Mart. Fl. Bras. ii. 3, p. 149; S. Wats. Bot. Calif. ii. p. 315; Fourn. Mex. Pl. Enum., Gram. p. 115.
Poa eragrostis, Linn. Sp. Pl. ed. 1, p. 68.
Eragrostis poæformis, Link, Hort. Berol. i. p. 188.
Poa megastachya, Koel. Gram. p. 181; H. B. K. Nov. Gen. et Sp. i. p. 158; Kunth, Enum. Pl. i. p. 333.
Briza eragrostis, Linn. Sp. Pl. ed. 1, p. 70.
Eragrostis megastachya, Link, Hort. Berol. i. p. 185.
Eragrostis major et *E. minor,* Host.; S. Wats. in Proc. Am. Acad. xviii. p. 182.
Eragrostis flavescens, Presl, Reliq. Hænk. i. p. 278?
A very widely dispersed and variable grass, the extreme forms being very different and usually treated as independent species; but we have followed Döll, Watson, and others in regarding them as belonging to one polymorphous species.
Mexico and Central America, common. Hb. Kew.

21. **Eragrostis purshii,** Schrad. in Linnæa, xii. p. 451; A. Gr. Man. Bot. Northern U.S. ed. 5, p. 632; Fourn. Mex. Pl. Enum., Gram. p. 116 (varietates α, β, γ, δ).
Eragrostis parvula, Steud. Gram. p. 277.
Eragrostis tephrosanthos, Steud. l. c. p. 278, partim ex Fournier.
New Jersey to Florida and Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*);

South Mexico, "very common," Fournier (*Bourgeau*, 445, 2594, 2637; *Müller*, 2125; *Galeotti*, 5824; *Berlandier*, 147, 621, 755); Nicaragua (*Lévy*).

22. **Eragrostis reptans,** Nees, Agrostol. Bras. p. 514; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 9); A. Gr. Man. Bot. Northern U. S. ed. 5, p. 631; S. Wats. Bot. Calif. ii. p. 314, et in Proc. Am. Acad. xviii. p. 181; Döll in Mart. Fl. Bras. ii. 3, p. 148; Griseb. Fl. Brit. W. Ind. p. 532.

Poa reptans, Michx. Fl. Bor.-Am. i. p. 69, t. 11; H. B. K. Nov. Gen. et Sp. i. p. 156.

Poa hypnoides, Lam. Ill. i. p. 185.

Megastachya reptans et *M. hypnoides,* Beauv. Agrostogr. p. 74; Fourn. Mex. Pl. Enum., Gram. p. 119.

Canada southward through Mexico and Central America to Brazil and in the West Indies, very common. Hb. Kew.

Closely allied to this species, and perhaps referable to it (some of them at least), are—*Megastachya gouini*, *M. corymbifera*, *M. breviflora*, and *M. fasciculata*, Fournier (Mex. Pl. Enum., Gram. pp. 119 et 120), none of which we have seen.

[*Eragrostis secundiflora*, Presl (Reliq. Hænk. i. p. 276); *Eragrostis simpliciflora*, Steud. (Gram. p. 178), syn. *Megastachya simpliciflora*, Presl (Reliq. Hænk. i. p. 283); *Eragrostis uninervia*, Steud. (Gram. p. 278), syn. *Megastachya uninervia*, Presl (Reliq. Hænk. i. p. 283); and *Eragrostis virescens*, Presl (loc. cit. p. 277), are all obscure plants.]

23. **Eragrostis virletii,** Fourn. Mex. Pl. Enum., Gram. p. 116.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).

88. ORTHOCLADA.

Orthoclada, Beauv. Agrostogr. p. 69, t. 14. fig. 9; Benth. et Hook. Gen. Plant. iii. p. 1190.

A monotype.

1. **Orthoclada rariflora,** Beauv. Agrostogr. p. 70; Döll in Mart. Fl. Bras. ii. 3, p. 117, t. 35.

Panicum rariflorum, Lam. Encycl. iv. p. 746.

Orthoclada laxa, Kunth, Revis. Gram. t. 71; Griseb. Fl. Brit. W. Ind. p. 531; Fourn. Mex. Pl. Enum., Gram. p. 123.

Poa rariflora et *P. subumbellata,* Rœm. et Schult. Syst. Veg. ii. p. 570.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 952); Panama, Chagres (*Fendler*, 380), Empire Station (*S. Hayes*, 479).—Peru; Guiana; Brazil; West Indies. Hb. Kew.

89. ZEUGITES.

Zeugites, Schreb. Gen. Plant. p. 810; Benth. et Hook. Gen. Plant. iii. p. 1191.

An exclusively Tropical American genus of about six species, ranging from Mexico and the West Indies to Colombia.

1. **Zeugites galeottiana,** Hemsl.

Krombholzia mexicana, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 21); Fourn. Mex. Pl. Enum., Gram. p. 122.

SOUTH MEXICO, on the banks of the river which waters the town of Sola in Oaxaca (*Galeotti*, 5751).

2. **Zeugites hartwegi,** Fourn. Mex. Pl. Enum., Gram. p. 121.

Despretzia mexicana, Benth. Pl. Hartw. p. 82, non Kunth.

GUATEMALA, Santa Maria (*Hartweg*, 569). Hb. Kew.

3. **Zeugites latifolia,** Hemsl.

Krombholzia latifolia, Fourn. Mex. Pl. Enum., Gram. p. 122.

SOUTH MEXICO, near Talea, Oaxaca (*Liebmann*), Dolores (*Liebmann*). Hb. Kew.

The plant in the Kew herbarium, which we have referred to this species, is not from the locality recorded by Fournier; but it agrees quite well with the description.

4. **Zeugites mexicana,** Trin. ex Fourn. Mex. Pl. Enum., Gram. p. 121.

Despretzia mexicana, Kunth, Revis. Gram. ii. p. 485, t. 157, et Enum. Pl. i. p. 40.

Zeugites americana, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 21), non Willd.

Panicum schiederi, Spreng. ex Steud. Gram. p. 411.

SOUTH MEXICO, Cordillera of Oaxaca at 3000 feet (*Galeotti*, 5695), Real del Monte (*Coulter*, 1694), Orizaba (*Müller*, 2020; *Schaffner*), without locality (*Schiede & Deppe*). Hb. Kew.

5. **Zeugites munroana,** Hemsl., n. sp. (Tab. CII. A. figg. 1–4.)

Herba perennis, glabra vel glabrescens, ramosa, ramis gracilibus nitidis adscendentibus pedalibus vel ultra. ***Folia*** longiuscule graciliterque petiolata, ovato-lanceolata, usque ad 2 poll. longa, acuta, basi rotundata, conspicue 5–7-nervia, venis transversis nunc conspicuis nunc fere obliteratis; vaginæ usque ad basin fissæ, obscure ciliolatæ, ligula brevi rotundata. ***Paniculæ*** 5–10- rarius usque ad 15-spiculatæ; spiculæ sæpissime 5-floræ, sed interdum 4-floræ interdum 6-floræ; flores confertiusculi, inferior tantum femineus. ***Glumæ*** exteriores insigniter reticulatæ, ciliatæ, inferior 7-nervia, 5-dentata, superior 5-nervia, 3-dentata. ***Floris feminei*** gluma nervoso-reticulata, apice late rotundata, valde ciliata; palea angustissima, bifida; styli a basi liberis; stigmata elongata, plumosa. ***Florum masculinorum*** glumæ elongatæ, acuminatæ, parce ciliatæ.

GUATEMALA, Volcan de Agua (*Salvin & Godman*, 345), ridge above Calderas, Volcan de Fuego 8300 feet (*Salvin*). Hb. Kew.

Since figuring and describing this, we have again examined the species of *Zeugites* in the Kew herbarium, and we now think that our *Z. munroana* may be only a variety of *Z. hartwegi*, Fourn.

EXPLANATION OF TAB. CII. A. FIGG. 1–4.

Fig. 1, a spikelet; 2, a male flower; 3, a female flower; 4, a pistil: all very much enlarged.

90. UNIOLA.

Uniola, Linn. Gen. Plant. n. 85; Benth. et Hook. Gen. Plant. iii. p. 1192.

Bentham and Hooker record the number of "genuine species" as four, all of which inhabit North America, and one of them extends to South America. Besides these, there is the very distinct West-Indian *U. racemiflora,* Trin.

1. **Uniola paniculata,** Linn. Sp. Pl. ed. 1, p. 71; Kunth, Enum. Pl. i. p. 425; Griseb. Fl. Brit. W. Ind. p. 531; Nees in Seem. Bot. Voy. 'Herald,' p. 225; Fourn. Mex. Pl. Enum., Gram. p. 122.

Briza caroliniana, Lam. Ill. i. p. 187, t. 45. fig. 3.

VIRGINIA to FLORIDA. Puerto de Santa Cruz on the Pacific, Oaxaca (*Liebmann*); PANAMA (*Seemann*).—COLOMBIA to ECUADOR. Hb. Kew.

Uniola effusa, U. mülleri, and *U. lugens,* Fournier (Mex. Pl. Enum., Gram. pp. 122 et 123), we have been unable to identify, not having corresponding numbers of the different collections cited. Bentham (Journ. Linn. Soc., Bot. xix. p. 122) doubts their being congeners of *U. paniculata.*

91. DISTICHLIS.

Distichlis, Rafin. in Journ. Phys. lxxxix. p. 104; Benth. et Hook. Gen. Plant. iii. p. 1193.

There are four or five species "or very distinct varieties" (Bentham) inhabiting North America and Andine and Extra-tropical South America; one of them is also found in maritime districts of Australia. The Mexican specimens in the Kew herbarium seem to represent three species, and we follow Fournier for their distribution, but with great doubts as to the limits of the species, which need a careful comparison with the North-American forms.

1. **Distichlis condensata,** Hemsl.

Brizopyrum condensatum, Fourn. Mex. Pl. Enum., Gram. p. 121.
Poa condensata, Kunth, Enum. Pl. i. p. 344.
Megastachya condensata, Presl, Reliq. Hænk. i. p. 284.

SOUTH MEXICO, Puerto de Santa Cruz, on the Pacific (*Liebmann*), Pochutla, Laguna, and Zapatango (*Liebmann*). Hb. Kew.

2. **Distichlis prostrata,** Desv. in Gay, Fl. Chil. vi. p. 398.

Poa prostrata, H. B. K. Nov. Gen. et Sp. i. p. 157; Kunth, Revis. Gram. ii. p. 461, t. 144, et Enum. Pl. i. p. 326.
Uniola prostrata, Trin. in Mém. Acad. St. Pétersb. 1838, Suppl. p. 55; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 8).
Megastachya prostrata, Rœm. et Schult. Syst. Veg. ii. p. 590.
Brizopyrum prostratum, Benth. ex Fourn. Mex. Pl. Enum., Gram. p. 120, cum varietatibus β et γ.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, valley of Mexico (*Bourgeau,* 223), Orizaba (*Liebmaun*), Tehuacan de las Granadas, Puebla at 5500 feet (*Galeotti,* 5746).—VENEZUELA to CHILI. Hb. Kew.

3. **Distichlis thalassica,** Desv. in Gay, Fl. Chil. vi. p. 397.

Brizopyrum pilosum, Presl, Reliq. Hænk. i. p. 280; Fourn. Mex. Pl. Enum., Gram. p. 120.
Brizopyrum obtusiflorum, Fourn. loc. cit.?
Poa preslei, Kunth, Enum. Pl. i. p. 326.
Poa thalassica, Kunth, loc. cit.?
Uniola pungens, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 8), excl. synon. fide Fournieri.

South Mexico, Juquila, Oaxaca (*Galeotti*, 5755), San Augustin (*Liebmann*), Santa Cruz (*Liebmann*).—Chili. Hb. Kew.

92. BRIZA.

Briza, Linn. Gen. Plant. n. 84; Benth. et Hook. Gen. Plant. iii. p. 1194.

About ten species, inhabiting Europe, North Africa, Temperate Asia, and South and Central America. Two or three of the European species are now widely colonized.

1. **Briza rotundata,** Steud. Gram. p. 284; S. Wats. in Proc. Am. Acad. xviii. p. 182.

Bromus rotundatus, H. B. K. Nov. Gen. et Sp. i. p. 152.
Chascolytrum rotundatum, Kunth, Revis. Gram. i. p. 121, et Enum. Pl. i. p. 373; Fourn. Mex. Pl. Enum., Gram. p. 112.
Calotheca rotundata, Rœm. et Schult. Syst. Veg. ii. p. 632.
Chascolytrum subaristatum, Desv. in Journ. de Bot. iii. p. 71; Kunth, Revis. Gram. i. p. 347, t. 87, et Enum. Pl. i. p. 373, cum syn.; Döll in Mart. Fl. Bras. ii. 3, p. 134.
Briza hamarkiana, Ch. et Schl. in Linnæa, vi. p. 39.

North Mexico, San Luis Potosi (*Schaffner*, 1035; *Parry & Palmer*, 935); South Mexico, Borrego, Orizaba (*Bourgeau*, 2750), Real del Monte 7000 feet (*Galeotti*, 5831), Chinantla, Puebla 7000 feet (*Liebmann*).—Bolivia; Argentina; Chili; Brazil; Uruguay. Hb. Kew.

93. POA.

Poa, Linn. Gen. Plant. n. 83; Benth. et Hook. Gen. Plant. i. p. 1196.

This large genus is generally diffused, though comparatively rare in the warmer regions. Upwards of 200 species have been published, but there are probably less than 100 distinct ones.

1. **Poa annua,** Linn. Sp. Pl. ed. i. p. 68; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 629; Döll in Mart. Fl. Bras. ii. 3, p. 121; S. Wats. in Proc. Am. Acad. xviii. p. 182, et Bot. Calif. ii. p. 311.

North Mexico, Monterey, Nuevo Leon (*Palmer*, 1365), San Luis Potosi (*Schaffner*, 1032); South Mexico, Ciudad Real, Chiapas (*Linden*, 1354). Hb. Kew.

This grass is now almost everywhere in temperate and subtropical regions; but it is impossible to decide whether it is really indigenous in the New World. Gray states that it is everywhere in cultivated and waste ground, but doubtfully indigenous. Chapman marks it as introduced in the Southern States; while Watson says: "No

doubt introduced on the coast, but apparently indigenous in Arizona, New Mexico, Western Texas, &c." Döll includes it in the 'Flora Brasiliensis' without comment.

2. **Poa bourgæi,** Fourn. Mex. Pl. Enum., Gram. p. 113.

South Mexico, San Angel in cultivated ground (*Bourgeau*, 225).

3. **Poa conglomerata,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 9); Peyr. in Linnæa, xxx. p. 8; Fourn. Mex. Pl. Enum., Gram. p. 113.

South Mexico, Toluca 8800 feet (*Heller*), peak of Orizaba at 12,000 feet (*Galeotti*, 5776), near Tacubaya and at San Augustin de las Cuevas (*Schaffner*).

4. **Poa depauperata,** H. B. K. Nov. Gen. et Sp. i. p. 162; Kunth, Enum. Pl. i. p. 355; Fourn. Mex. Pl. Enum., Gram. p. 113.

Poa pauciflora, Rœm. et Schult. Syst. Veg. ii. p. 549.

Deyeuxia capillaris, Clar. ex Fourn.

Mexico (in herb. mus. Par. ex Fourn.).—Ecuador, Quito.

5. **Poa infirma,** H. B. K. Nov. Gen. et Sp. i. p. 158; Kunth, Enum. Pl. i. p. 349; Nees in Linnæa, xix. p. 693; Fourn. Mex. Pl. Enum., Gram. p. 113.

Poa annua, Ch. et Schl. in Linnæa, vi. p. 38, non Linn.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Alpine regions (*Schiede & Deppe*), Orizaba (*Müller*, 2094), Popocatepetl 12,000 feet (*Galeotti*, 5828).

It is doubtful whether this is specifically distinct from *P. annua.* Fournier cites a specimen collected by Linden at Ciudad Real (see above) as belonging here, and it is probably the same referred to *P. annua* in the Kew herbarium, but we are unable to find the specimen for comparison.

6. **Poa ruprechtii,** Peyr. in Linnæa, xxx. p. 6; S. Wats. in Proc. Am. Acad. xviii. p. 182; Fourn. Mex. Pl. Enum., Gram. p. 113.

North Mexico, mountains east of Saltillo (*Palmer*, 1366); South Mexico, Cocustepec near Toluca 8800 feet (*Heller*), Santa Fé near Mexico (*Bourgeau*, 670), Oaxaca (*Galeotti*, 5884). Hb. Kew.

7. **Poa subuniflora,** Steud. Gram. p. 257; Kunth, Revis. Gram. i. pp. 115 et 339, t. 83, et Enum. Pl. i. p. 354.

Deyeuxia? poæformis, H. B. K. Nov. Gen. et Sp. i. p. 146.

South Mexico, Volcan de Jorullo at 3000 feet (*Humboldt & Bonpland*).

94. GRAPHEPHORUM.

Graphephorum, Desv. in Nouv. Bull. Soc. Philom. ii. (1810), p. 189, et in Journ. de Bot. i. (1813), p. 71; Benth. et Hook. Gen. Plant. iii. p. 1197.

A genus of about eight species, inhabiting North America, Asia, and Europe.

1. **Graphephorum altijugum,** Fourn. Mex. Pl. Enum., Gram. p. 111.

South Mexico, peak of Orizaba at 12,000 to 14,000 feet (*Liebmann*).

We have not seen this plant, which Fournier states is allied to *G. psilosantha.*

95. GLYCERIA.

Glyceria, R. Br. Prodr. Fl. Nov. Holl. p. 179; Benth. et Hook. Gen. Plant. iii. p. 1197.

About thirty species, widely spread in both north and south temperate regions; rare in the tropics.

1. **Glyceria fluitans,** R. Br. Prodr. Fl. Nov. Holl. p. 179; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 627; S. Wats. Bot. Calif. ii. p. 307; Fourn. Mex. Pl. Enum., Gram. p. 148.

CANADA, southward.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*), Barranca near Tizapan, valley of Mexico (*Bourgeau*).—EUROPE; ASIA; AFRICA; AUSTRALIA.

We have seen no Mexican specimens of this common water-grass.

96. FESTUCA.

Festuca, Linn. Gen. Plant. n. 88; Benth. et Hook. Gen. Plant. iii. p. 1198.

This genus almost covers the whole area of the Order and is numerous in species, though the upwards of 230 described by various authors might, in the opinion of the authors of the 'Genera Plantarum,' be reduced to something like eighty.

1. **Festuca æquipaleata,** Fourn. Mex. Pl. Enum., Gram. p. 125.

SOUTH MEXICO, peak of Orizaba at 14,000 feet (*Liebmann*).

"Differt a *F. tolucensi* foliis retrorsum scabris, paleis æqualibus, inferiore breviter mucronata, superiore profunde bifida."—*Fournier.*

2. **Festuca amplissima,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10); Fourn. Mex. Pl. Enum., Gram. p. 125.

SOUTH MEXICO, Vagueria del Jacal, peak of Orizaba at 10,000 feet (*Galeotti*, 5776; *Liebmann*), Desierto Viejo (*Bourgeau*, 1307), Cañada (*Bilimek*). Hb. Kew.

3. **Festuca fournieriana,** Hemsl.

Gouinia polygama, Fourn. Mex. Pl. Enum., Gram. p. 103, cum var. majore.

FLORIDA.—SOUTH MEXICO, Vera Cruz (*Gouin*), sea-shore at San Augustin, on the Pacific, Oaxaca (*Liebmann*), without locality (*Hahn*). Hb. Kew.

We have seen no Floridan specimens of this plant, which may, however, have already been described under or referred to *Festuca.*

4. **Festuca fratercula,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10); Fourn. Mex. Pl. Enum., Gram. p. 124.

SOUTH MEXICO, peak of Orizaba 11,000 to 12,000 feet (*Galeotti*, 5778), Cumbre de Estapa (*Liebmann*).

5. **Festuca hephæstophila,** Nees in Steud. Gram. p. 310; Fourn. Mex. Pl. Enum., Gram. p. 124.

Festuca tolucensis, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10).

Festuca, sp. n., Benth. Pl. Hartw. p. 629.

South Mexico, without locality (*Hahn*), peak of Orizaba 12,500 feet (*Galeotti*, 5770); Guatemala, Volcan de Agua (*Hartweg*, 629). Hb. Kew.

6. **Festuca liebmanni,** Fourn. Mex. Pl. Enum., Gram. p. 124.

South Mexico, without locality (*Liebmann*).

7. **Festuca livida,** Willd. in Spreng. Syst. Veg. i. p. 353; Kunth, Enum. Pl. i. p. 399; Peyr. in Linnæa, xxx. p. 9. (Tab. CII. B. figg. 5–8.)

Bromus lividus, H. B. K. Nov. Gen. et Sp. i. p. 150, et vii. t. 689; Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10); Ch. et Schl. in Linnæa, vi. p. 38.
Schenodorus lividus, Rœm. et Schult. Syst. Veg. ii. p. 707.
Festuca grandiflora, Steud. Gram. p. 311.
Helleria livida, Fourn. Mex. Pl. Enum., Gram. p. 129.

South Mexico, peak of Orizaba 13,000 to 13,500 feet, "the last phænogamous plant" (*Linden*, 93), at 13,000 feet "limits of vegetation" (*Galeotti*, 5768), without locality (*Hahn*). Hb. Kew.

We took this very remarkable grass for an undescribed species, but the late Mr. Bentham suggested that it might be the *Bromus lividus*, badly figured by H. B. K., and Dr. Parry, who has since compared our plant with authentic specimens in the Paris herbarium, confirms this view.

EXPLANATION OF TAB. CII. B. Figg. 5–8.

Fig. 5, a spikelet; 6, one floret with a portion of the rhachis; 7, a floret with the pale removed; 8, stamens and pistil: all enlarged.

8. **Festuca muralis,** Kunth, Syn. Pl. Orb. Nov. i. p. 218; H. B. K. Nov. Gen. et Sp. vii. t. 691; Fourn. Mex. Pl. Enum., Gram. p. 123, cum β. *pumila.*

Vulpia muralis, Nees in Linnæa, xix. p. 694.
Festuca myurus, H. B. K. Nov. Gen. et Sp. i. p. 155, excl. syn., non Linn.

South Mexico, Montezuma, near Cuantepec (*Bourgeau*, 1158), Chinantla (*Liebmann*), without locality (*Schaffner*).—Quito. Hb. Kew.

9. **Festuca orgyalis,** Willd. ex Fourn. Mex. Pl. Enum., Gram. p. 124.

Diplachne procera, Spreng. Syst. Veg. i. p. 351.
Festuca procera, var. *mexicana,* Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10).

South Mexico, without locality (*Humboldt & Bonpland*).

10. **Festuca tolucensis,** H. B. K. Nov. Gen. et Sp. i. p. 153; Kunth, Enum. Pl. i. p. 399; Fourn. Mex. Pl. Enum., Gram. p. 124.

Diplachne tolucensis, Spreng. Syst. Veg. i. p. 351.
Festuca multiculmis, Steud. Gram. p. 311.

South Mexico, Toluca 14,000 feet (*Heller*), between Islahuaca and Toluca 8280 feet (*Humboldt & Bonpland*), Vaqueria del Jacale 10,000 feet (*Liebmann*), Orizaba at 14,000 feet (*Liebmann*). Hb. Kew.

11. **Festuca willdenowiana,** Fourn. Mex. Pl. Enum., Gram. p. 124.

Festuca mexicana, Willd. ex Spreng. Syst. Veg. i. p. 356, non Rœm. et Schult. ex Fourn.

MEXICO, without locality (*Schaffner*).

12. **Festuca,** sp.

GUATEMALA, pine-forest, Volcan de Fuego 12,000 feet (*Salvin & Godman*). Hb. Kew.

97. BROMUS.

Bromus, Linn. Gen. Plant. n. 89 ; Benth. et Hook. Gen. Plant. iii. p. 1200.

Species about forty, widely dispersed in the north temperate regions, and a few in extratropical South America ; rarer in mountainous regions within the Tropics.

1. **Bromus anomalus,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 10) ; Fourn. Mex. Pl. Enum., Gram. p. 126.

SOUTH MEXICO, Real del Monte, and Cerro de San Felipe, Oaxaca, 8000 feet (*Galeotti*, 5815, 5757), Chinantla (*Liebmann*).

2. **Bromus ciliatus,** Linn. Sp. Pl. ed. 1, p. 76 ; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 635 ; S. Wats. Bot. Calif. ii. p. 320, et in Proc. Am. Acad. xviii. p. 183 ; Peyr. in Linnæa, xxx. p. 10.

Bromus hookeri, Fourn. Mex. Pl. Enum., Gram. p. 127, cum varietatibus omnibus.
Bromus purgans, Linn. Sp. Pl. ed. 1, p. 76 ; Hook. et Arn. Bot. Beech. Voy. p. 119.
Bromus canadensis, Michx. Fl. Bor.-Am. i. p. 65.
Bromus pubescens, Muehl. Calam. p. 169 ; Kunth, Enum. Pl. i. p. 417.
Bromus marginatus, Steud. Gram. p. 322, ex Fourn.
Bromus segetum, Ch. et Schl. in Linnæa, vi. p. 38, non H. B. K.
Bromus pendulinus, Sessé in Lag. Elench. p. 4; Rœm. et Schult. Syst. Veg. ii. p. 644; Peyr. in Linnæa, xxx. p. 10.
Festuca pendulina, Spreng. Syst. Veg. i. p. 356.
Bromus compressus, Lag. Elench. p. 4.

CANADA to TEXAS, NEW MEXICO, and CALIFORNIA, but apparently not in the south-eastern States.—NORTH and SOUTH MEXICO, common in the temperate regions. Hb. Kew.

Fournier publishes the new name *B. hookeri* for the aggregate of this variable species ; but the North-American botanists have long accepted *B. ciliatus,* Linn., as understood by the former.

3. **Bromus exaltatus,** Bernh. in Linnæa, xv. Literat. Ber. p. 90 ; Fourn. Mex. Pl. Enum., Gram. p. 126, cum var. β.

Bromus subalpinus, Rupr. in Bull. Acad. Brux. ix. (reprint, p. 11).

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*) ; SOUTH MEXICO, peak of Orizaba, along rivulets in pine- and oak-woods, 10,000 to 11,000 feet (*Galeotti*, 5769 ; *Liebmann*). Hb. Kew.

[*Bromus setifolius,* Presl (Reliq. Hænk. i. p. 261), and *Bromus virgatus,* Presl (loc. cit. p. 263), are recorded as doubtfully Mexican.]

4. **Bromus unioloides,** H. B. K. Nov. Gen. et Sp. i. p. 151; Nees in Linnæa, xix. p. 694; Döll in Mart. Fl. Bras. ii. 3, p. 110.

Festuca unioloides, Willd. Hort. Berol. i. p. 3, t. 3.

Bromus willdenowii, Kunth, Revis. Gram. i. p. 134.

Ceratochloa unioloides, Beauv. Agrostogr. p. 148 (in indice); Fourn. Mex. Pl. Enum., Gram. p. 126.

Texas to Arizona.—Mexico, without locality (*Aschenborn*).—Peru; Brazil; Chili.

98. BRACHYPODIUM.

Brachypodium, Beauv. Agrostogr. p. 100, pro parte, t. 19. fig. 3; Benth. et Hook. Gen. Plant. iii. p. 1201.

Bentham and Hooker estimate the number of species at five or six:—"Europæ et Asiæ temperatæ vel montanæ incolæ, quarum 1 vel 2 etiam in Africa Tropica et Australi Colombia et Mexico obviæ," from which it may be inferred that Bentham did not regard Fournier's Mexican species as distinct. The material, however, is too imperfect for us to decide the question, therefore Fournier's species are enumerated on their merits.

1. **Brachypodium latifolium,** Fourn. Mex. Pl. Enum., Gram. p. 125.

South Mexico, without locality (*Liebmann*).

2. **Brachypodium mexicanum,** Link, Hort. Berol. i. p. 41; Fourn. Mex. Pl. Enum., Gram. p. 125.

Festuca mexicana, Rœm. et Schult. Syst. Veg. ii. p. 732.

Festuca scabra, Lag. Elench. p. 4.

Triticum scaberrimum, Tausch. in Flora, 1837, p. 118.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Chapultepec and Tacubaya (*Schaffner*), Chinantla, San Felipe, Cumbre de Estepa (*Liebmann*). Hb. Kew.

3. **Brachypodium subulatum,** Fourn. Mex. Pl. Enum., Gram. p. 125.

South Mexico, peak of Orizaba 12,000 to 14,000 feet, Chinantla, between San Andres and San Miguel, and Cumbre de Istepec (*Liebmann*). Hb. Kew.

In addition to the foregoing, S. Watson (Proc. Am. Acad. xviii. p. 183) refers a specimen collected by Schaffner at San Luis Potosi to *B. cæspitosum,* Rœm. et Schult., which is usually regarded as a variety of the common *B. pinnatum.*

Tribe XII. HORDEÆ.

Hordeæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1093.

There are twelve genera in this Tribe, and about eight species scattered over most temperate regions; rare in the tropics, and a few extending to the Arctic regions. Four of the genera are monotypic. *Lolium perenne,* Linn., and *Lolium temulentum,* Linn., are members of this Tribe colonized in Mexico.

99. AGROPYRUM.

Agropyrum, J. Gærtn. ex Beauv. Agrostogr. p. 101, t. 20. figg. 1 et 2; Benth. et Hook. Gen. Plant. iii. p. 1202.

About twenty species widely dispersed in the temperate regions of both hemispheres.

1. **Agropyrum pilosum,** Presl, Reliq. Hænk. i. p. 267; Fourn. Mex. Pl. Enum., Gram. p. 149.

Triticum pilosum, Kunth, Enum. Pl. i. p. 442.

South Mexico, Acapulco (*Hænke*), La Miquiguana (*Karwinski*).

100. HORDEUM.

Hordeum, Linn. Gen. Plant. n. 98; Benth. et Hook. Gen. Plant. iii. p. 1206.

This genus comprises about twelve species, which inhabit Europe, North Africa, Temperate Asia, and Extratropical North and South America.

1. **Hordeum adscendens,** H. B. K. Nov. Gen. et Sp. i. p. 180; Kunth, Enum. Pl. i. p. 456; Fourn. Mex. Pl. Enum., Gram. p. 149.

South Mexico, in the valley of Mexico, between Chapultepec and Carpio at 7000 feet (*Humboldt & Bonpland*).

2. **Hordeum jubatum,** Linn. Sp. Pl. ed. i. p. 85; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 638; S. Wats. Bot. Calif. ii. p. 325; Fourn. Mex. Pl. Enum., Gram. p. 149.

Canada, southward to Texas and California, but apparently not in the south-eastern States.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Tacubaya (*Bourgeau*, 219; *Schaffner*), Orizaba (*Schaffner*). Hb. Kew.

101. ELYMUS.

Elymus, Linn. Gen. Plant. n. 96; Benth. et Hook. Gen. Plant. iii. p. 1206.

About twenty species, inhabiting temperate Europe and Asia, and North and South America.

1. **Elymus mexicanus,** Cav. Elench. 1803, p. 14; Jacq. Eclog. Gram. t. 19; Steud. Gram. p. 350; Fourn. Mex. Pl. Enum., Gram. p. 149.

Mexico.

This is an obscure species, reduced to *E. sabulosus*, Bieb., an eastern species, in Kunth, Enum. Pl. i. p. 451.

2. **Elymus sitanion,** Schult. Mant. i. p. 426; S. Wats. Bot. Calif. ii. p. 327; Fourn. Mex. Pl. Enum., Gram. p. 149.

Oregon and Minnesota, southward to Texas and California.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Cañon de las Minas and Victoria (*Karwinski*).

3. **Elymus virginicus,** Linn. Sp. Pl. ed. i. p. 84; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 639; Chapm. Fl. Southern U. S. p. 567; Fourn. Mex. Pl. Enum., Gram. p. 149.

CANADA to FLORIDA and TEXAS.—SOUTH MEXICO, Orizaba (*Thomas; Müller*, 2080; *Bourgeau*, 3142; *Schaffner*). Hb. Kew.

Tribe XIII. BAMBUSEÆ.

Bambuseæ, Benth. et Hook. Gen. Plant. iii. pp. 1076 et 1094.

This Tribe is almost wholly tropical and subtropical; its coldest limits being in China, Japan, Illinois, the Andes and Juan Fernandez. Only one member of the tribe is at present known to be indigenous in the whole of Africa, and no species is described in Bentham's 'Flora Australiensis,' but more recently, according to Müller (Fragm. Austr. vi. p. 85, and xi. p. 129), flowerless specimens of three species have been collected in Queensland and North Australia. Only one (or two) species of the *Bambuseæ* occurs in America, north of Mexico. There are twenty-two genera, comprising about seventy-five species.

102. ARUNDINARIA.

Arundinaria, Michx. Fl. Bor.-Am. i. p. 73; Benth. et Hook. Gen. Plant. iii. p. 1207.

A genus of about twenty-four species, inhabiting tropical and subtropical America and Asia, reaching Maryland and Illinois in the former, and Japan in the latter.

1. **Arundinaria acuminata,** Munro in Trans. Linn. Soc. xxvi. p. 15; Fourn. Mex. Pl. Enum., Gram. p. 131.

SOUTH MEXICO, Vera Cruz and Xalcomulco (*Liebmann*). Hb. Kew.

2. **Arundinaria longifolia,** Fourn. Mex. Pl. Enum., Gram. p. 131.

SOUTH MEXICO, Jicaltepec and Pital (*Liebmann*), Jicaltepec (*Karwinski*).

103. ARTHROSTYLIDIUM.

Arthrostylidium, Rupr. in Mém. Acad. St. Pétersb. sér. 6, v. p. 117, tt. 3–5; Benth. et Hook. Gen. Plant. iii. p. 1208.

An exclusively Tropical American genus of twelve described species.

1. **Arthrostylidium racemiflorum,** Steud. Gram. p. 336; Munro in Trans. Linn. Soc. xxvi. p. 44.

Merostachys racemiflora, Fourn. Mex. Pl. Enum., Gram. p. 131.

SOUTH MEXICO, without locality (*Ghiesbreght*), Potrero (*Hahn*), Mirador, Zacuapan, and Dos Puentes (*Liebmann*).—VENEZUELA. Hb. Kew.

104. CHUSQUEA.

Chusquea, Kunth, Syn. Pl. Orb. Nov. i. p. 254; Benth. et Hook. Gen. Plant. iii. p. 1209.

An exclusively American genus of about thirty species, ranging from Mexico and the West Indies, through the Andes to Chili and Juan Fernandez.

1. **Chusquea bilimeki,** Fourn. Mex. Pl. Enum., Gram. p. 132.
South Mexico, valley of Mexico (*Bilimek*).

2. **Chusquea carinata,** Fourn. Mex. Pl. Enum., Gram. p. 132.
South Mexico, Orizaba (*Müller*, 650).

3. **Chusquea galeottiana,** Rupr. in Bull. Acad. Brux. ix. (reprint, p. 20); Munro in Trans. Linn. Soc. xxvi. p. 57; Fourn. Mex. Pl. Enum., Gram. p. 132.
South Mexico, Cordillera of Oaxaca 8000 feet (*Galeotti*, 5749). Hb. Kew.

4. **Chusquea liebmanni,** Fourn. Mex. Pl. Enum., Gram. p. 132.
South Mexico, between San Miguel del Puente and Sadani, Oaxaca (*Liebmann*).
This species seems to have been founded on very scanty material, for the author does not describe it, merely observing: "Differt a *C. mülleri* et *C. spinosa* foliis ovali-elongatis, non lineari-lanceolatis, a *C. galeottiana* et *C. carinata* ramulis gracilioribus. Ligulæ parvæ, apice obtusæ, vaginæ subteretes supra cum mesoneuro pilis parvis raris sparsæ."

5. **Chusquea mülleri,** Munro in Trans. Linn. Soc. xxvi. p. 65; Fourn. Mex Pl. Enum., Gram. p. 132.
South Mexico, Orizaba (*Müller*, 2024), Aserradero de la Cruz (*Schaffner*), peak of Orizaba (*Liebmann*). Hb. Kew.

6. **Chusquea simplicifolia,** Munro in Trans. Linn. Soc. xxvi. p. 54, t. 2.
Nicaragua, Chontales (*Tate*, 441, 553); Panama, "everywhere" (*Seemann*, 426), Lion Hill (*S. Hayes*, 661). Hb. Kew.

7. **Chusquea? spinosa,** Fourn. Mex. Pl. Enum., Gram. p. 131.
South Mexico, between La Galera and Pochutla (*Liebmann*).
Fournier's description does not go beyond the leaves:—"Ramis spinosis ex nodo paucis, longis, foliis linearibus 3″ longis, mesoneuro infra piloso, marginibus scabris, ligula non prominente, vaginis supra longe ciliatis, ciliis rigidis, merithallis semper brevibus."

105. GUADUA.

Guadua, Kunth, Syn. Pl. Orb. Nov. i. p. 252; Benth. et Hook. Gen. Plant. iii. p. 1210.

A Tropical American genus of about fifteen species.

1. **Guadua aculeata,** Rupr. ex Fourn. Mex. Pl. Enum., Gram. p. 130.
South Mexico, Colipa (*Liebmann; Karwinski*), without locality (*Schiede & Deppe*).

2. **Guadua amplexifolia,** Presl, Reliq. Hænk. i. p. 256; Munro in Trans. Linn. Soc. xxvi. p. 84; Rupr. Mém. Acad. St. Pétersb. sér. 6, iii. p. 128, t. 14; Fourn. Mex. Pl. Enum., Gram. p. 130.
Bambusa amplexifolia, Rœm. et Schult. Syst. Veg. vii. p. 1348.
Mexico (*Hœnke*); Panama, Cruces (*Seemann*, 425), Chagres (*Fendler*, 381).—Venezuela. Hb. Kew.

3. **Guadua? flabellata,** Fourn. Mex. Pl. Enum., Gram. p. 131.

South Mexico, peak of Orizaba 9000 feet (*Liebmann*).

The whole description is: "Ramis flabellatim divergentibus, foliis linearibus longis angustis cum vaginis glabris."

4. **Guadua inermis,** Rupr. ex Fourn. Mex. Pl. Enum., Gram. p. 129.

South Mexico, Papantla (*Karwinski*), Colipa (*Liebmann*).

5. **Guadua intermedia,** Rupr. ex Fourn. Mex. Pl. Enum., Gram. p. 130.

South Mexico, Papantla (*Karwinski*).

6. **Guadua latifolia,** Kunth, Syn. Pl. Orb. Nov. i. p. 254, Enum. Pl. i. p. 433, et Suppl. p. 357; Munro in Trans. Linn. Soc. xxvi. p. 78; Fourn. Mex. Pl. Enum., Gram. p. 130.

Bambusa latifolia, Humb. et Bonpl. Pl. Æquin. i. p. 68, t. 21.

South Mexico, eastern side (*Karwinski*).—Venezuela to Brazil, and in Trinidad.

106. BAMBUSA.

Bambusa, Schreb. Gen. Plant. p. 236; Benth. et Hook. Gen. Plant. iii. p. 1210.

There are about twenty-four well-known species, all inhabiting Tropical Asia, and one of them Tropical America.

1. **Bambusa vulgaris,** Wendl. Collect. Pl. ii. p. 26, t. 47; Munro in Trans. Linn. Soc. xxvi. p. 106, cum syn.; Fourn. Mex. Pl. Enum., Gram. p. 129; Griseb. Fl. Brit. W. Ind. p. 528.

South Mexico, in dense woods, Colipa (*Liebmann*).

Respecting this Munro says: "The native country is still doubtful: it is certainly naturalized in many places; but there is no reliable information as to its being actually indigenous anywhere, either in the East or in the West."

Gramineārum genera Mexicana dubia.

1. **Pogonopsis tenera,** Presl, Reliq. Hænk. i. p. 333, t. 46; Benth. et Hook. Gen. Plant. iii. p. 1096.

2. **Pentarrhaphis scabra,** H. B. K. Nov. Gen. et Sp. i. p. 177, t. 60; Benth. et Hook. loc. cit.

3. **Disakisperma mexicana,** Steud. Gram. p. 287; Fourn. Mex. Pl. Enum., Gram. p. 122.

4. **Chaboissæa ligulata,** Fourn. Mex. Pl. Enum., Gram. p. 112; Benth. et Hook. loc. cit.

CRYPTOGAMIA.

VASCULARES.

Order CLXI. FILICES.

With unimportant exceptions, Hooker and Baker's 'Synopsis Filicum' is followed here, both for genera and species; therefore it is convenient to adopt the same classification. The number of genera retained in the second edition of the work * in question is seventy-six, and the number of distinct species now known is about 3000, spread over nearly the whole face of the earth where vegetation exists. Fournier, who has monographed the Mexican Ferns, takes, like many other pteridologists, a much narrower view of species, thus making a much larger total. The late Sir William Hooker and Mr. Baker's determinations and limitations of the species have been accepted almost throughout, without any attempt at revision; but the names of many of Fournier's segregate species, as well as some of those of other writers, which are reduced by Mr. Baker, either in the Kew Herbarium, or in the Kew copy of Fournier's monograph of the Mexican Ferns, are cited in the following enumeration after the collectors' numbers. An exception to Mr. Baker's naming are the considerable collections recently made in North-eastern Mexico by Schaffner, and Parry and Palmer, which were not incorporated in the herbarium at the time when we looked through it to extract the localities and other particulars of the species found within our limits. Prof. Eaton, however, has published them, and they are included here; but it should be mentioned that it is probable that some of the same forms may in consequence occur under two names, especially as Fournier includes a collection made by Schaffner in the same region. In the Phanerogamia the rule generally observed with regard to references was to cite the work in which the name given was first published; in the Ferns it has not been deemed necessary to attempt this difficult task.

The Ferns of Costa Rica and Nicaragua are still comparatively unknown; from the former country there are only about fifty species in the Kew Herbarium, forty-eight of which were collected by Mr. P. G. Harrison in 1884, and include six novelties.

Suborder I. *GLEICHENIACEÆ.*

Restricted to *Gleichenia* and the monotypic Australian *Platyzoma*.

1. GLEICHENIA.

Gleichenia, Smith; Hook. et Bak. Syn. Fil. p. 11, et ed. 2, p. 449, t. 1. fig. 2.

Twenty-seven species † widely spread in warm countries, but most numerous in

* The pagination is exactly the same in the first and second editions up to page 448, the additions being given in the form of an appendix.

† The numbers of species are taken from the second edition of the 'Synopsis Filicum,' and will be too low in some instances, as Baker and others have published many species since that was issued.

Australia and America, and extending southward to Chili and New Zealand, and northward to China and Japan.

1. **Gleichenia bancroftii,** Hook. Sp. Fil. i. p. 5, t. 4; Hook. et Bak. Syn. Fil. ed. 2, p. 12 (sub *G. longissima*, Bl.).

Mertensia bancroftii, Kunze in Linnæa, xviii. p. 307; Liebm. Mexicos Bregner, p. 144; Fourn. Mex. Pl. Enum. i. p. 137; Griseb. Fl. Brit. W. Ind. p. 651.
Mertensia grandis, Fée, 9e Mém. Foug. p. 31.
Gleichenia glauca, Hook. Sp. Fil. i. p. 4, t. 3 B, non Swartz; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 343.

North Mexico, Sierra Madre (*Seemann*, 1926); South Mexico, Mirador (*Schaffner*), Dos Puentes, between Totutla and Huatusco (*Liebmann*), Azul (*Bourgeau*, 3152); Guatemala, Chilasco (*Godman & Salvin*).—Colombia; Guiana; Brazil; West Indies. Hb. Kew.

In the 'Synopsis Filicum' this is united with *G. longissima*, Blume, and, thus extended, the range of the species includes India, China, Japan, the Malayan archipelago, and the Sandwich Islands.

2. **Gleichenia (Mertensia) pectinata,** Presl; Hook. et Bak. Syn. Fil. p. 15.

Mertensia glaucescens, Willd.; Hook. Sp. Fil. i. p. 11; Mart. et Gal. Foug. Mex. p. 17; Liebm. Mexicos Bregner, p. 146; Fourn. Mex. Pl. Enum. i. p. 137.
Mertensia hermanni, Hook. et Grev. Ic. Fil. t. 14, excl. syn.

South Mexico, Orizaba (*Bourgeau*, 3615), Mirador (*Galeotti*, 6402), Huitamalco (*Liebmann*), Tlapacoya (*Hahn*); Guatemala (*Skinner; Godman & Salvin*); Panama, Chagres (*Fendler*, 316), railway cutting (*S. Hayes*, 176).—Common in Tropical South America and the West Indies. Hb. Kew.

3. **Gleichenia (Mertensia) pubescens,** H. B. K.; Hook. et Bak. Syn. Fil. p. 13; Hook. Sp. Fil. i. p. 8; Bak. in Journ. Bot. 1884, p. 362.

Mertensia immersa, Kaulf.; Hook. et Grev. Ic. Fil. t. 15.
Mertensia tomentosa, Swartz, Syn. Fil. p. 164; Mart. et Gal. Foug. Mex. p. 16; Fourn. Mex. Pl. Enum. i. p. 137.
Mertensia furcata, Swartz; Liebm. Mexicos Bregner, p. 145.
Mertensia palmata, Schaffner; Fée 9e Mém. Foug. p. 32.
Gleichenia mathewsii, Hook. Sp. Fil. i. p. 9; Fourn. loc. cit. p. 138.

South Mexico, Vera Cruz to Orizaba (*Müller*, 73 *a*), valley of Cordova (*Bourgeau*, 1450: *tomentosa*, Swartz), Huitamalco (*Liebmann*), Chiapas (*Ghiesbreght*), Huatusco (*Schmitz*), region of Orizaba (*Bourgeau*, 3188: *palmata*, Schaff.), Cordillera of Oaxaca, 7500 feet (*Galeotti*, 6382: *mathewsii*, Hook.); Guatemala, without locality (*Skinner*, *mathewsii*), Yzabal (*Godman & Salvin*); Nicaragua, Chontales (*Tate; Seemann*, 212; *Lévy*, 507); Costa Rica (*Harrison*).—Colombia to Peru; Guiana and Brazil, and in the West Indies. Hb. Kew.

4. **Gleichenia (Mertensia) revoluta,** H. B. K.; Hook. Sp. Fil. i. p. 7, t. 7 A; Hook. et Bak. Syn. Fil. p. 13; Bak. in Journ. Bot. 1884. p. 362.

Costa Rica (*Harrison*).—Jamaica to Ecuador and Brazil. Hb. Kew.

Species dubiæ vel non visæ.

Mertensia gleichenioides, Liebm. Mexicos Bregner, p. 144.—Cuapa, Vera Cruz at 2500 to 3000 feet.

Gleichenia hermanni, R. Br. ex Ch. et Schl. in Linnæa, v. p. 620.—Mexico.

Gleichenia nitida et **G. tenuis,** Presl, Reliq. Hænk. i. p. 70.—Mexico.

Mertensia sartorii, et **M. schaffneri,** Fée 9e Mém. Foug. pp. 31 et 32.—Mexico.

Suborder II. *POLYPODIACEÆ.*

As understood by Hooker and Baker this includes fifty-seven genera referred to thirteen tribes.

Tribe I. CYATHEÆ.

There are eight genera of this tribe, which consists almost exclusively of arboreous species, inhabiting the tropics and south temperate regions.

2. CYATHEA.

Cyathea, Smith; Hook. et Bak. Syn. Fil. p. 16, et ed. 2, p. 450, t. 1. fig. 4.

Eighty species, mostly inhabiting the torrid zone, one reaching Japan, and several endemic in New Zealand and South Australia.

1. **Cyathea arborea,** Sm.; Hook. et Bak. Syn. Fil. p. 16; Hook. Sp. Fil. i. p. 17.

Cyathea glauca, Fourn. Mex. Pl. Enum. i. p. 135.

South Mexico, Orizaba (*Bourgeau,* 2794).—West Indies; Brazil. Hb. Kew.

2. **Cyathea insignis,** Eaton in Mem. Amer. Acad. Sc. n. s. viii. p. 215, ex Baker in Gard. Chron. 1873, p. 776; Hook. et Bak. Syn. Fil. p. 17.

Cyathea bourgæi, Fourn. Mex. Pl. Enum. i. p. 135.

Cyathea princeps, J. Sm. Ferns Brit. & For. p. 291.

South Mexico, valley of Cordova (*Bourgeau,* 2200); Guatemala, Coban and mountain forests, Vera Paz (*Godman & Salvin,* 376).—Colombia; Ecuador; Cuba. Hb. Kew.

3. **Cyathea jurgensenii,** Fourn. Mex. Pl. Enum. i. p. 135.

South Mexico, Sierra San Pedro Nolasco, &c. (*Jurgensen,* 874). Hb. Kew.

4. **Cyathea mexicana,** Ch. et Schl. in Linnæa, v. p. 616; Hook. Sp. Fil. i. p. 15; Hook. et Bak. Syn. Fil. p. 20; Fourn. Mex. Pl. Enum. i. p. 136.

Cyathea articulata et *C. hexagona,* Fée, 9e Mém. Foug. p. 25.
Cyathea aurea, Klotzsch in Fée Gen. Fil. p. 352?
Cyathea denudans, Kunze ex Hook. et Bak.

South Mexico, near Jalapa (*Galeotti*, 6335), Zacualtipan (*Hartweg*, 412), Mirador (*Liebmann*), valley of Cordova (*Bourgeau*, 1942). Hb. Kew.

Fournier records this species from Guiana and Brazil, but there are no specimens in the Kew Herbarium besides those here enumerated.

5. **Cyathea schanschin,** Mart. Ic. Pl. Bras. p. 77, t. 54; Fée, 9e Mém. Foug. p. 25; Hook. et Bak. Syn. Fil. p. 19; Fourn. Mex. Pl. Enum. i. p. 136.

Cyathea fulva, Fée, 9e Mém. Foug. p. 25.
Alsophila fulva, Mart. et Gal. Foug. Mex. p. 78, t. 23.
Cyathea affinis et *C. mexicana,* Mart. et Gal. l. c. p. 80.
Cyathea oligocarpa, Kunze, Syn. Pl. Crypt. p. 101.

South Mexico, Cordillera of Oaxaca, in pine woods at 6000 feet (*Galeotti*, 6346, 6347), region of Orizaba (*Bourgeau*, 2794).—Venezuela to Peru and Brazil. Hb. Kew.

Var. ? *caudice inerma.*

Guatemala, Chilasco (*Godman & Salvin*). Hb. Kew.

6. **Cyathea serra,** Willd.; Hook. et Bak. Syn. Fil. p. 17; Hook. Sp. Fil. i. p. 17, t. 9 A; Fourn. Mex. Pl. Enum. i. p. 135; Fourn. in Bull. Soc. Bot. France, xxii. p. 172.

North Mexico, Tetela del Oro, Sierra Madre (*Rascon*); South Mexico, valley of Cordova (*Bourgeau*, 1454).—Brazil; West Indies. Hb. Kew.

3. HEMITELIA.

Hemitelia, R. Br.; Hook. et Bak. Syn. Fil. p. 27, et ed. 2, p. 454, t. 1. fig. 5.

Species thirty, mostly tropical and arboreous; one is peculiar to New Zealand, and one species extends into extratropical South Africa.

1. **Hemitelia apiculata,** Hook. in Hook. et Bak. Syn. Fil. p. 29.

Hemistegia willdenowii, Fée, Gen. Fil. p. 351; Fourn. Mex. Pl. Enum. i. p. 135.

South Mexico, Oaxaca (*Jurgensen*, 873). Hb. Kew.

2. **Hemitelia costaricensis,** Mitt. ex Kuhn in Linnæa, xxxvi. p. 159; Hook. et Bak. Syn. Fil. ed. 2, p. 455.

Costa Rica and Panama.

3. **Hemitelia decurrens,** Liebm. Mexicos Bregner, p. 134.

Hemistegia decurrens, Fourn. Mex. Pl. Enum. i. p. 135.
Hemistegia lucida et *H. elegans,* Fée, 9e Mém. Foug. p. 25*.
Hemistegia elegantissima, Fée, 8e Mém. Foug. p. 111.

* In the Kew library there is no copy of the original edition of Fée's ninth Memoir, but it is replaced by a copy of a small lithographed edition, which, judging from Fournier's citations, differs in some particulars from the original.

South Mexico, in the primeval woods of Lobani, Chinantla 3000 to 3500 feet (*Liebmann*), Sierra San Pedro Nolasco, &c. (*Jurgensen*, 915), Oaxaca (*Galeotti*, 6537). —Cuba; Guiana, ex Fournier.

4. **Hemitelia mexicana,** Liebm. Mexicos Bregner, p. 135.

Hemistegia mexicana, Fourn. Mex. Pl. Enum. i. p. 135.

South Mexico, primeval woods, near Lacoba, Chinantla at 3000 feet (*Liebmann*).

Neither this, nor the preceding is represented in the Kew Herbarium by authenticated specimens.

5. **Hemitelia nigricans,** Presl; Hook. et Bak. Syn. Fil. ed. 2, p. 454; Fourn. in Bull. Soc. Bot. France, xix. p. 261.

Hemitelia obscura, Mett. in Karst. Fl. Columb. ii. t. 197. fig. 2.

Nicaragua, Chontales (*Lévy*, 465); Panama, Tolé, Veraguas (*Seemann*, 1120).—Colombia to Peru. Hb. Kew.

6. **Hemitelia petiolata,** Hook. Sp. Fil. i. p. 31, t. 16; Hook. et Bak. Syn. Fil. p. 28; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 240.

Panama, Chagres (*Fendler*, 417, 421), Taboga (*Seemann*). Hb. Kew.

7. **Hemitelia subincisa,** Kunze in Bot. Zeit. 1844, p. 296; Hook. et Bak. Syn. Fil. p. 27.

Guatemala, forest of Vera Paz (*Salvin*), primeval woods, Ixcan (*Bernoulli & Cario,* 271).—Ecuador; Peru. Hb. Kew.

Bernoulli and Cario's specimen of this species exhibits free and anastomosing costal veins in different parts of the same frond, thus combining the characters of two different sections of the genus.

4. ALSOPHILA.

Alsophila, R. Br.; Hook. et Bak. Syn. Fil. p. 31, et ed. 2, p. 456, t. 1. fig. 6.

Ninety arboreous species, chiefly tropical; one extends to Japan, and two are found in extratropical South America; one is peculiar to New Zealand, and about five to Australia.

1. **Alsophila armata,** Presl; Hook. et Bak. Syn. Fil. p. 35; Hook. Sp. Fil. i. p. 40.

Alsophila aculeata, Klotzsch; Fourn. Mex. Pl. Enum. i. p. 134, et in Bull. Soc. Bot. France, xxii. p. 172.

Alsophila myosuroides, Liebm. Mexicos Bregner, p. 134.

Alsophila aurea, Fée, 8e Mém. Foug. p. 109.

Alsophila mexicana, Mart. Ic. Pl. Crypt. Bras. p. 70, t. 45; Hook. et Bak. Syn. Fil. ed. 2, p. 38.

Alsophila bicrenata, Fourn. loc. cit.

Cyathea bicrenata, Liebm. Mexicos Bregner, p. 137.

North Mexico, Monterey (*Weber*), Sierra Madre (*Rascon*); South Mexico, Totontepec, Oaxaca (*Liebmann*), Mirador (*Sartorius*), Cordova (*Schaffner*); Guatemala,

Yzabal (*Godman & Salvin*); Nicaragua, Chontales (*Seemann*, 195); Panama, Mamei (*S. Hayes*, 389).—Throughout the West Indies and Tropical America. Hb. Kew.

2. **Alsophila blechnoides,** Hook. Sp. Fil. i. p. 35; Hook. et Bak. Syn. Fil. p. 32.

Polypodium parkeri, Hook. et Grev. Ic. Fil. t. 232.

Guatemala, Yzabal (*Godman & Salvin*); Panama, Chagres (*Fendler*, 405).—Tropical South America and the West Indies. Hb. Kew.

3. **Alsophila compta,** Mart. Ic. Pl. Crypt. Bras. p. 66, t. 41; Hook. et Bak. Syn. Fil. p. 33; Liebm. Mexicos Bregner, p. 133.

South Mexico, Tabasco (*Linden*, 1515).—Brazil. Hb. Kew.

4. **Alsophila ferox,** Presl; Hook. et Bak. Syn. Fil. p. 34; Hook. Sp. Fil. i. p. 41.

Alsophila armata, Mart. Ic. Pl. Crypt. Bras. t. 48 non Presl.

Panama, Isle de Taboga (*Seemann*, 967), Chagres (*Fendler*, 402), near the city of Panama (*S. Hayes*, 177).—Tropical South America and the West Indies. Hb. Kew.

5. **Alsophila godmani,** Hook. in Hook. et Bak. Syn. Fil. p. 36. (Tab. CIII.)

Guatemala, Coban (*Godman & Salvin*). Hb. Kew.

6. **Alsophila infesta,** Kunze; Hook. Sp. Fil. i. p. 42; Hook. et Bak. Syn. Fil. p. 34.

Guatemala, Yzabal (*Godman & Salvin*).—Tropical South America. Hb. Kew.

7. **Alsophila microphylla,** Klotzsch; Hook. et Bak. Syn. Fil. p. 36; Fourn. in Bull. Soc. Bot. France, xix. p. 261.

Nicaragua, Chontales (*Lévy*, 1475).—Venezuela. Hb. Kew.

8. **Alsophila pruinata,** Kaulf.; Hook. et Bak. Syn. Fil. p. 38; Hook. Sp. Fil. i. p. 47.

Lophosoria pruinata, Presl, Die Gefäss. Crypt. p. 27; Fourn. Mex. Pl. Enum. i. p. 133 (varietates).
Lophosoria discolor, Presl, ex Fourn.
Trichosorus glaucescens, T. densus et *T. frigidus,* Liebm. Mexicos Bregner, pp. 131–133.
Lophosoria frigida, Fourn. loc. cit. p. 134.
Polypodium cæsium, Presl, Reliq. Hænk. i. p. 27.
Polypodium griseum, Schkuhr, Fil. t. 25.
Polypodium pruinatum, Swartz, Fl. Ind. Occ. p. 1682.
Lophosoria warscewiczii, Klotzsch ex Fourn. loc. cit.

South Mexico, Huatusco (*Schaffner*, var. α, Fourn.), Orizaba (*Botteri; Müller*, 1480), Jalapa (*Galeotti*, 6334, var. β. *densa*, Fourn.), Chinantla, Puebla (*Liebmann*, β), Trapiche de la Concepcion, Oaxaca (*Liebmann: Trichosorus glaucescens*, Lieb.), Cerro de Sempoaltepec, 9000 to 10,000 feet (*Liebmann: T. frigidus*, Lieb.), Chiapas (*Ghiesbreght*); Costa Rica, Chontales (*Lévy*, 1476).—South America, southward to Chili and Juan Fernandez and in the West Indies. Hb. Kew.

9. **Alsophila salvini,** Hook. in Hook. et Bak. Syn. Fil. p. 36. (Tab. CIV.)
GUATEMALA, Chilasco (*Godman & Salvin*, 4, β). Hb. Kew.

10. **Alsophila schiedeana,** Presl; Kunze in Linnæa, xiii. p. 149; Hook. Sp. Fil. i. p. 48; Hook. et Bak. Syn. Fil. p. 33; Fourn. Mex. Pl. Enum. i. p. 134 (cum β majore).

Aspidium equestre, Fée, 9e Mém. Foug. p. 30, non Kunze, cfr. Fée, 10e Mém. in App.

SOUTH MEXICO, Tlapacoya, Vera Cruz (*Liebmann*), Cordova (*Bourgeau*, 1834, 1835), Chiapas, &c. (*Ghiesbreght*, 365); GUATEMALA, Coban (*Godman & Salvin*). Hb. Kew.

Tribe II. DICKSONIEÆ.

Six genera, one of which (*Dicksonia*) is arboreous.

5. HYPODERRIS.

Hypoderris, R. Br.; Hook. et Bak. Syn. Fil. p. 46, et ed. 2, p. 460, t. 1. fig. 10.

Besides the following there is one other species which is endemic in Trinidad.

1. **Hypoderris seemanni,** Prentice in Seem. Journ. Bot. 1869, p. 240; Hook. et Bak. Syn. Fil. ed. 2, p. 460.

Hypoderris adnata et *H. marginalis,* Fourn. in Bull. Soc. Bot. France, xix. p. 260, et in Bot. Zeit. 1873, pp. 8 et 9?

NICARAGUA, Chontales (*Seemann*, 206; *Lévy*). Hb. Kew.

6. WOODSIA.

Woodsia, R. Br.; Hook. et Bak. Syn. Fil. p. 46, t. 1. fig. 11.

Fourteen species, mostly in high mountains and the Arctic regions. Genus not represented in Australasia.

1. **Woodsia mollis,** J. Sm. in Hook. Gen. Fil. et in Seem. Bot. Voy. 'Herald,' p. 342; Hook. Sp. Fil. i. p. 60; Hook. et Bak. Syn. Fil. p. 47; Fourn. Mex. Pl. Enum. i. p. 132; Eaton in Proc. Am. Acad. xviii. p. 188.

Woodsia canescens, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 331.
Woodsia fragilis, Liebm. Mexicos Bregner, p. 128.
Woodsia mexicana, R. Br. in Wall. Pl. Asiat. Rar. i. p. 41 in nota; Fée, 7e Mém. Foug. p. 66, t. 26; Eaton in Proc. Am. Acad. xviii. p. 188.
Woodsia guatemalensis, Hook. Sp. Fil. i. p. 60, t. 21 A.
Physematium molle, Kaulf. in Flora, 1829, p. 341; Kunze, Anal. Pterid. p. 41, t. 27.
Cheilanthes canescens, Kunze, Farrnkr. i. p. 71. t. 35.
Woodsia pusilla, Fourn. in Bull. Soc. Bot. France, p. 329?

NORTH MEXICO, San Rafael mountains, San Luis Potosi (*Schaffner*, 957); SOUTH MEXICO, Pedregal (*Bourgeau*, 459), Real del Monte (*Coulter*, 1691), Vera Cruz to Orizaba (*Müller*, 5), Chiapas (*Ghiesbreght*, 231), peak of Orizaba near Santa Maria, Alpatlahua

(*Liebmann*: *fragilis*), Orizaba (*Müller*, 6; *Bourgeau*, 2788 bis: *canescens*); GUATEMALA, Motagua valley (*Godman & Salvin*), Volcan de Fuego (*Godman & Salvin*).—COLOMBIA to PERU and BRAZIL. Hb. Kew.

Eaton (Proc. Am. Acad. xviii. p. 188) treats *Woodsia mexicana*, Fée, as a distinct species, and records it from Soledad, Coahuila (*Palmer*), and the San Miguelito mountains, San Luis Potosi (*Schaffner*, 927; *Parry & Palmer*, 1000).

7. DICKSONIA.

Dicksonia, L'Hérit.; Hook. et Bak. Syn. Fil. p. 49, et ed. 2, p. 460, t. 2. fig. 13.

Forty species, about half of them arboreous. The majority of them inhabit Tropical America and Polynesia; one species reaches Canada, and several arboreous species are restricted to extratropical Australia and New Zealand.

1. **Dicksonia adiantoides,** H. B. K. Nov. Gen. et Sp. i. p. 23; Hook. Sp. Fil. i. p. 75, t. 26 B; Hook. et Bak. Syn. Fil. p. 52.

Dicksonia erosa, Hook. Sp. Fil. i. p. 75.

Dicksonia dissecta, Griseb. Fl. Brit. W. Ind. p. 660, non Hook.

GUATEMALA, Chilasco (*Godman & Salvin*).—WEST INDIES to BRAZIL and PERU. Hb. Kew.

2. **Dicksonia apiifolia,** Hook. Sp. Fil. i. p. 77, t. 26 C; Hook. et Bak. Syn. Fil. p. 53, vix Swartz.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 356).—Andes of ECUADOR and PERU. Hb. Kew.

3. **Dicksonia cicutaria,** Swartz; Hook. Sp. Fil. i. p. 76; Hook. et Bak. Syn. Fil. p. 53.

Dicksonia ordinata, Kaulf. Enum. Fil. p. 226; Kunze, Farrnkr. ii. p. 14, t. 106.

Dennstædtia ordinata, Fourn. Mex. Pl. Enum. i. p. 131, et in Bull. Soc. Bot. France, xix. p. 260.

Dicksonia tenera, Presl ex Hook.

Dennstædtia tenera, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 343; Fourn. loc. cit.

Dicksonia exaltata, Kunze in Bot. Zeit. viii. p. 59.

Dicksonia cornuta, Kaulf. Enum. Fil. p. 227; Hook. Sp. Fil. i. p. 76.

Dicksonia distenta, Fee, 9^{e} Mém. Foug. p. 24, ex Fourn.

SOUTH MEXICO, Chiapas (*Ghiesbreght*, 368), Hacienda de Jovo (*Liebmann*), Jalapa (*Linden*, 7), region of Orizaba, Izhuatlancillo (*Bourgeau*, 2342: *tenera*), around Mexico (*Schmitz*); GUATEMALA, Chilasco (*Godman & Salvin*); NICARAGUA, without locality (*Lévy*).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

4. **Dicksonia guatemalensis,** Baker in Hook. et Bak. Syn. Fil. ed. 2, p. 461.

Cibotium guatemalense, Reichb. f. ex Kuhn in Linnæa, xxxvi. p. 152.

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 351); GUATEMALA, Coban (*Godman & Salvin*). Hb. Kew.

5. **Dicksonia regalis,** Baker in Hook. et Bak. Syn. Fil. ed. 2, p. 461.

SOUTH MEXICO (*Linden*). Cultivated specimens only in the Kew Herbarium.

6. **Dicksonia rubiginosa,** Kaulf. Enum. Fil. p. 226; Hook. Sp. Fil. i. p. 79, t. 27 A; Hook. et Bak. Syn. Fil. p. 53; Bak. in Journ. Bot. 1884, p. 362.

Dicksonia dissecta, Hook. Sp. Fil. i. p. 77.

Dicksonia umbrosa, Liebm. Mexicos Bregner, p. 110.

Dennstædtia rubiginosa, T. Moore, Ind. Fil. p. 307; Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 343; Fourn. Mex. Pl. Enum. i. p. 131, et in Bull. Soc. Bot. France, xxii. p. 172.

Dennstædtia dissecta, Fourn. loc. cit. cum *β. glabrescens.*

Dicksonia coniifolia, Fourn. loc. cit. non Hook.

Dicksonia distenta, Kunze in Linnæa, xiii. p. 145, ex Fourn.

North Mexico, Sierra Madre (*Rascon*); South Mexico, region of Orizaba (*Bourgeau*, 2605, Izhuatlancillo (*Bourgeau*, 2343: *dissecta*), Chiapas, &c. (*Ghiesbreght*, 367; *Linden*, 1537), Mirador (*Liebmann; Linden*, 76); Guatemala, without locality (*Skinner*), Coban (*Godman & Salvin*); Costa Rica (*Harrison*); Cocos Island (*Hinds*).—West Indies to Peru and Brazil; also in Bourbon and Mauritius. Hb. Kew.

7. **Dicksonia schiedei,** Baker in Hook. et Bak. Syn. Fil. p. 50.

Cibotium schiedei, Ch. et Schl. in Linnæa, vi. p. 616; Mart. et Gal. Foug. Mex. p. 80; Liebm. Mexicos Bregner, p. 127.

South Mexico, valley of Cordova (*Bourgeau*, 2278), Barranca de Consoquitla, near Mirador (*Liebmann*), Jalapa 4000 feet (*Galeotti*, 6458), Hacienda de la Laguna (*Schiede & Deppe*). Hb. Kew.

8. **Dicksonia sellowiana,** Hook. Sp. Fil. i. p. 67, t. 22 B; Hook. et Bak. Syn. Fil. p. 51.

South Mexico, Chiapas, &c. (*Ghiesbreght*, 352, 353); Guatemala, Chilasco (*Godman & Salvin*).—Brazil. Hb. Kew.

9. **Dicksonia wendlandi,** Baker in Hook. et Bak. Syn. Fil. ed. 2, p. 460.

Cibotium wendlandi, Mett. ex Kuhn in Linnæa, xxxvi. p. 151.

Guatemala, without locality (*Skinner; Wendland*). Hb. Kew.

Species dubiæ vel non visæ.

Dicksonia multifida, Swartz; Presl, Reliq. Hænk. p. 68.—Mexico.

Cibotium horridum, Liebm. Mexicos Bregner, p. 127.

Tribe III. HYMENOPHYLLEÆ.

Three genera, namely *Hymenophyllum*, *Trichomanes*, and *Loxsoma*, a singular New Zealand monotype.

8. HYMENOPHYLLUM.

Hymenophyllum, Linn.; Hook. et Bak. Syn. Fil. p. 56, et ed. 2, p. 463, t. 2. fig. 16.

Eighty species are described in Hooker & Baker's Synopsis; they are very widely spread in temperate and tropical regions, though absent in large areas.

1. **Hymenophyllum abruptum,** Hook. Sp. Fil. i. p. 88, t. 31; Hook. et Bak. Syn. Fil. p. 57.

Hymenophyllum brevifrons, Kunze, Farrnkr. i. p. 236, t. 96.

GUATEMALA, Chilasco (*Godman & Salvin*).—CUBA; JAMAICA, and VENEZUELA to BRAZIL. Hb. Kew.

2. **Hymenophyllum asplenioides,** Swartz; Hook. Sp. Fil. i. p. 87, et Ic. Pl. t. 957; Hook. et Bak. Syn. Fil. p. 57; Liebm. Mexicos Bregner, p. 138; Fourn. Mex. Pl. Enum. i. p. 61.

Hymenophyllum macrocarpon et *H. baueri,* Schaffner ex Fourn.

SOUTH MEXICO, Huatusco (*Schaffner*), Mirador (*Sartorius*), around Mexico (*Schmitz*), Barranca de Consoquitla (*Müller*, 432); GUATEMALA, Ixcan (*Bernoulli & Cario*, 265).—CUBA to BRAZIL. Hb. Kew.

3. **Hymenophyllum axillare,** Swartz; Hook. Sp. Fil. i. p. 111; Hook. et Grev. Ic. Fil. t. 124; Hook. et Bak. Syn. Fil. p. 58; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 343.

SOUTH MEXICO, Huatusco (*Schaffner*); GUATEMALA, Coban (*Godman & Salvin*).—WEST INDIES; VENEZUELA. Hb. Kew.

4. **Hymenophyllum brevistipes,** Liebm. Mexicos Bregner, p. 138; Fourn. Mex. Pl. Enum. i. p. 61.

SOUTH MEXICO, Tepinapa, Oaxaca, Teotalcingo, Chinantla and San Antonio, Huatusco (*Liebmann*).—CUBA; VENEZUELA.

There are no specimens bearing this name in the Kew Herbarium.

5. **Hymenophyllum ciliatum,** Swartz; Hook. Sp. Fil. i. p. 88; Hook. et Grev. Ic. Fil. t. 35; Hook. et Bak. Syn. Fil. p. 6; Fourn. Mex. Pl. Enum. i. p. 62. (Tab. CV., var. *splendidum.*)

Hymenophyllum commutatum et *H. schiedeanum,* Presl ex Hook.

Hymenophyllum splendidum, Van den Bosch ex Hook.

Hymenophyllum trapezoidale, Liebm. Mexicos Bregner, p. 141.

Hymenophyllum frazeri, Mett. ex Fourn. loc. cit. p. 63.

SOUTH MEXICO, around Mexico (*Schmitz*), Chinantla, Puebla, and Teotalcingo, Oaxaca (*Liebmann: trapezoidale*); GUATEMALA, Coban and Chilasco (*Godman & Salvin: splendidum*), Coban (*Türckheim*).—WEST INDIES to CHILI and SOUTH BRAZIL; also in AFRICA, ASIA, and NEW ZEALAND. Hb. Kew.

6. **Hymenophyllum crispum,** H. B. K.; Hook. Sp. Fil. i. p. 107; Hook. et Bak. Syn. Fil. p. 59.

SOUTH MEXICO, around Huatusco (*Schaffner*), around Mexico (*Schmitz*), Vera Cruz to Orizaba (*Müller*, 399, 687).—COLOMBIA to PERU and BRAZIL. Hb. Kew.

7. **Hymenophyllum flaccidum,** Van den Bosch, Syn. p. 400; Fourn. Mex. Pl. Enum. i. p. 62.

Hymenophyllum undulatum, Smith; Hook. Sp. Fil. i. p. 105, et Ic. Pl. t. 964; Hook. et Bak. Syn. Fil. p. 59.
Hymenophyllum bulnesianum, Schaffner, Fée, 9e Mém. Foug. p. 31.

South Mexico, Huatusco (*Liebmann*), near Mexico (*Schaffner*).—Jamaica; Peru. Hb. Kew.

Fournier's conception of this species is quite at variance with Hooker and Baker's 'Synopsis Filicum.'

8. **Hymenophyllum fucoides,** Swartz; Hook. Sp. Fil. i. p. 100; Hook. et Grev. Ic. Fil. t. 963; Hook. et Bak. Syn. Fil. p. 69.
Hymenophyllum pedicellatum, Kunze ex Hook.

South Mexico, Vera Cruz to Orizaba (*Müller*, 7), Chiapas (*Ghiesbreght*); Guatemala, Chilasco (*Godman & Salvin*); Nicaragua (*Lévy*, 1507).—West Indies to Peru and Brazil. Hb. Kew.

9. **Hymenophyllum hirsutum,** Swartz; Hook. Sp. Fil. i. p. 88; Hook. et Grev. Ic. Fil. t. 84; Hook. et Bak. Syn. Fil. p. 63; Fourn. Mex. Pl. Enum. i. p. 62; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 343.
Sphærocionium hirsutum, Fée ex Fourn.
Sphærocionium asterothrix, Fée, 10e Mém. Foug. in App.

South Mexico, Vera Cruz to Orizaba (*Müller*, 398; *Schaffner*); Guatemala, Chilasco (*Godman & Salvin*).—In the West Indies and southward to Patagonia, also in the Mascarene Islands. Hb. Kew.

10. **Hymenophyllum hirtellum,** Swartz; Hook. Sp. Fil. i. p. 90, t. 31 D; Hook. et Bak. Syn. Fil. p. 64; Liebm. Mexicos Bregner, p. 141.

South Mexico, Oaxaca (*Liebmann*).—Jamaica; Guadaloupe. Hb. Kew.

Fournier refers "*H. hirtellum*, Liebm. non Swartz" to *H. lineare*, Swartz, as also *Sphærocionium schiedeanum*, Presl, *H. trapezoidale*, Liebm. partim, and *H. ciliatum*, Ch. et Schl. in Linnæa, v. p. 619, non Swartz.

11. **Hymenophyllum interruptum,** Kunze in Linnæa, ix. p. 107, et Anal. Pterid. p. 48, t. 30; Hook. Sp. Fil. i. p. 92, t. 33 B; Hook. et Bak. Syn. Fil. p. 65; Fourn. Mex. Pl. Enum. i. p. 62.
Sphærocionium ciliatum, Fée, 9e Mém. Foug. non Presl ex Fourn.

South Mexico, Huatusco (*Schaffner*).—Guadaloupe, and Colombia to Peru.

Although this is recorded as Mexican in Hooker and Baker's 'Synopsis Filicum,' there appear to be no Mexican specimens in the Kew Herbarium.

12. **Hymenophyllum lineare,** Swartz; Hook. et Bak. Syn. Fil. p. 66, vix Fourn. Mex. Pl. Enum. p. 62.
Hymenophyllum elegans, Spreng.; Hook. Sp. Fil. i. p. 91.
Hymenophyllum trifidum, Hook. et Grev. Ic. Fil. t. 196.

GUATEMALA, Chilasco (*Godman & Salvin*).—WEST INDIES to BRAZIL and PERU. Hb. Kew.

13. **Hymenophyllum microcarpum,** Desv.; Hook. et Bak. Syn. Fil. p. 65.

Hymenophyllum organense, Hook. Sp. Fil. i. p. 90, t. 32 B.

GUATEMALA, Vera Paz (*Godman & Salvin*), Costa Grande (*Bernoulli & Cario*, 379).—VENEZUELA to PERU and BRAZIL. Hb. Kew.

14. **Hymenophyllum myriocarpum,** Hook. Sp. Fil. i. p. 106, t. 37 D; Hook. et Bak. Syn. Fil. p. 59; Fourn. Mex. Pl. Enum. i. p. 61.

SOUTH MEXICO, Mirador (*Sartorius*), Orizaba (*Müller* 7 ex *Fourn.*).—COLOMBIA to PERU.

There are no Mexican specimens of this species in the Kew Herbarium, though it is recorded as Mexican in the 'Synopsis Filicum;' and Müller's 7 is referred to *H. fucoides.*

15. **Hymenophyllum polyanthos,** Swartz; Hook. Sp. Fil. i. p. 106; Hook. et Bak. Syn. Fil. p. 60; Mart. et Gal. Foug. Mex. p. 81; Liebm. Mexicos Bregner, p. 139.

Hymenophyllum protrusum, Hook. Sp. Fil. i. p. 104, t. 37 B; Fourn. Mex. Pl. Enum. i. p. 61.
Hymenophyllum jalapense, Ch. et Schl. in Linnæa, v. p. 619.
Hymenophyllum nigrescens, Liebm. Mexicos Bregner, p. 140.
Hymenophyllum botryoides, Van den Bosch, in Nederl. Arch. v. p. 160.

SOUTH MEXICO, near Orizaba (*Schaffner*), Chiapas &c. (*Ghiesbreght*, 609), Mirador (*Liebmann: jalapense*), Vera Cruz to Orizaba (*Müller*, 1799: *jalapense*), Chinantla, Puebla (*Liebmann: nigrescens*), Jalapa 4000 feet (*Galeotti*, 6394: *botryoides*); GUATEMALA, Yzabal and San Gerónimo (*Godman & Salvin*); NICARAGUA, Chontales (*Tate; Lévy*, 1468); PANAMA, Coiba (*Seemann*).—Very widely diffused in TROPICAL and SUBTROPICAL REGIONS. Hb. Kew.

16. **Hymenophyllum sericeum,** Swartz; Hook. Sp. Fil. i. p. 92; Hook. et Bak. Syn. Fil. p. 66.

Hymenophyllum plumosum, Kaulf. Enum. Fil. p. 267; Liebm. Mexicos Bregner, p. 141.
Hymenophyllum pulchellum, Ch. et Schl. in Linnæa, v. p. 618; Fourn. Mex. Pl. Enum. i. p. 62?

SOUTH MEXICO, Matlalvea, Vera Cruz (*Liebmann: plumosum*) (*Schaffner; Schiede*); GUATEMALA, Coban (*Godman & Salvin*).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

17. **Hymenophyllum tunbridgense,** Smith, β. **wilsoni,** Hook. Sp. Fil. i. p. 95 (species); Hook. et Bak. Syn. Fil. p. 67.

GUATEMALA, Volcan de Agua (*Godman & Salvin*).—ANDES southward to CHILI; NEW ZEALAND; WESTERN EUROPE. Hb. Kew.

Fournier enumerates ordinary *tunbridgense* from Mexico, to which he reduces *H. fucoides,* var. *frigidum,* Liebm. (Mexicos Bregner, p. 139).

18. **Hymenophyllum valvatum,** Hook. et Grev. Ic. Fil. t. 219; Hook. Sp. Fil. i. p. 90; Hook. et Bak. Syn. Fil. p. 65.

GUATEMALA (*Bernoulli & Cario*, 255); NICARAGUA, Omotepe (*Wright*).—WEST INDIES and Andes of COLOMBIA and PERU. Hb. Kew.

Species non visæ.

Hymenophyllum pectinatum, Cav. Præl. n. 685; Presl, Reliq. Hænk. i. p. 69. —Mexico.

Hymenophyllum cruentum, Cav. Præl. n. 684; Presl, Reliq. Hænk. i. p. 69. —Mexico.

Hymenophyllum millefolium, Ch. et Schl. in Linnæa, v. p. 620.—Mexico.

9. TRICHOMANES.

Trichomanes, Smith; Hook. et Bak. Syn. Fil. p. 71, et ed. 2, p. 464, t. 2. fig. 17.

Ninety species, covering about the same wide range as *Hymenophyllum*.

1. **Trichomanes alatum,** Swartz; Hook. Sp. Fil. i. p. 123: Hook. et Grev. Ic. Fil. t. 21; Fourn. in Bull. Soc. Bot. France, xix. p. 249.

Trichomanes attenuatum, Hook. Sp. Fil. i. p. 122, t. 39 c.

NICARAGUA, without locality (*Lévy*, 1509).—WEST INDIES; COLOMBIA; BRAZIL. Hb. Kew.

2. **Trichomanes bancroftii,** Hook. et Grev. Ic. Fil. t. 204; Hook. Sp. Fil. i. p. 123; Hook. Gard. Ferns, t. 56; Hook. et Bak. Syn. Fil. p. 78.

GUATEMALA, Yzabal (*Bernoulli*, 856).—WEST INDIES to BRAZIL and PERU. Hb. Kew.

3. **Trichomanes botryoides,** Kaulf. Enum. Fil. p. 263; Hook. et Bak. Syn. Fil. p. 72.

Trichomanes nanum, Bory; Hook. Sp. Fil. i. p. 115.

PANAMA, Coiba (*Seemann*).—GUIANA. Hb. Kew.

4. **Trichomanes crispum,** Linn.; Hook. Sp. Fil. i. p. 130; Hook. et Bak. Syn. Fil. p. 82.

Trichomanes hænkei, Presl, Hymen. p. 36, t. 3, ex Hook. MSS.

Trichomanes galeottii, Fourn. in Bull. Soc. Bot. France, xv. p. 147, et Mex. Pl. Enum. i. p. 59.

Trichomanes pellucens, Liebm. Mexicos Bregner, p. 142, non Kunze ex Fourn.

Trichomanes lucens, Fée, 9e Mém. Foug. non Swartz ex Fourn.

Trichomanes kaulfussii, Griseb. Cat. Pl. Cub. p. 273, non Hook. et Grev. ex Fourn.

SOUTH MEXICO, Oaxaca at 4000 feet (*Galeotti*, 6530), Teotalcingo (*Liebmann*); GUATEMALA, Choctum (*Godman & Salvin*); PANAMA, Coiba (*Seemann*).—WEST INDIES to PERU and BRAZIL, and in west TROPICAL AFRICA. Hb. Kew.

5. **Trichomanes daucoides,** Presl, Epim. p. 12, t. 7, ex Fourn. in Bull. Soc. Bot. France, xix. p. 249.

NICARAGUA, Omotépé (*Friedrichsthal*).

6. **Trichomanes elegans,** Rudge; Hook. Sp. Fil. i. p. 114; Hook. Gard. Ferns, t. 2; Hook. et Bak. Sp. Fil. p. 72.

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 442); GUATEMALA, Choctum (*Godman & Salvin*); PANAMA, Chagres (*Fendler*, 388), Coiba (*Seemann*, 645).—TRINIDAD to PERU. Hb. Kew.

7. **Trichomanes godmani,** Hook. in Hook. et Bak. Syn. Fil. p. 74; Baker, in Journ. Linn. Soc. ix. p. 337, t. 8. (Tab. CVI. A. Fig. 1, small portion of frond bearing one receptacle, enclosing sporangia.)

GUATEMALA, Yzabal (*Godman & Salvin*); PANAMA, without locality (*S. Hayes*, 33). Hb. Kew.

8. **Trichomanes kaulfussi,** Hook. et Grev. Ic. Fil., App. p. 9; Hook. et Bak. Syn. Fil. p. 79.

Trichomanes lucens, Hook. et Grev. Ic. Fil. t. 10, non Swartz.

GUATEMALA, Chilasco (*Godman & Salvin*).—WEST INDIES; GUIANA; NORTH BRAZIL. Hb. Kew.

9. **Trichomanes kraussii,** Hook. et Grev. Ic. Fil. t. 149; Hook. Sp. Fil. i. p. 120; Hook. et Bak. Syn. Fil. p. 77.

Didymoglossum kraussii, Presl; Fourn. in Bull. Soc. Bot. France, xix. p. 249.
Hemiphlebium kraussii, Van den Bosch, Syn. Hymen. p. 41.

SOUTH MEXICO, Orizaba (*Schmitz*); GUATEMALA, Yzabal (*Godman & Salvin*); Chilion, near Mazatenango (*Bernoulli*); NICARAGUA (*Lévy*, 1480); COSTA RICA (*Hoffmann*).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

10. **Trichomanes pinnatum,** Hedw.; Hook. et Bak. Syn. Fil. p. 84.

Trichomanes floribundum, H. B. K.; Hook. Sp. Fil. i. p. 129; Hook. et Grev. Ic. Fil. t. 9.
Neuromanes hedwigii, Van den Bosch, Syn. Hymen. p. 8.
Neurophyllum pinnatum, Presl, Hymen. p. 19, partim ex Fourn.
Neurophyllum hedwigianum, Fée, 10e Mém. Foug. p. 50.

SOUTH MEXICO, Oaxaca 3000 feet (*Galeotti*, 6468, 6542) at 12,000 feet (*Liebmann*); GUATEMALA, Yzabal (*Bernoulli*, 898), Choctum (*Godman & Salvin*); HONDURAS (*Mrs. Mitchell*); NICARAGUA, Chontales (*Lévy*, 1435); PANAMA (*Seemann*).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

11. **Trichomanes punctatum,** Poiret; Hook. Sp. Fil. i. p. 116; Hook. et Grev. Ic. Fil. t. 236; Hook. et Bak. Syn. Fil. p. 74.

GUATEMALA, Chilion, near Mazatenango (*Bernoulli*, 427); PANAMA, without locality (*Seemann*), Lion Hill (*S. Hayes*, 234).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

12. **Trichomanes pusillum,** Swartz; Hook. Sp. Fil. i. p. 117; Hook. et Bak. Syn. Fil. p. 77.

Trichomanes quercifolium, Hook. et Grev. Ic. Fil. t. 115.
Trichomanes schaffneri, Schl. in Linnæa, xxvi. p. 368.
Didymoglossum reptans, var. *β. schaffneri,* Fourn. Mex. Pl. Enum. i. p. 61.
Microgonium schaffneri, Fée, 9e Mém. Foug.

South Mexico, Mirador (*Liebmann*), near Orizaba (*Schaffner: schaffneri*), Orizaba (*Müller*, 3978), Chiapas &c. (*Ghiesbreght*, 611); Guatemala, Coban and Chilasco (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 1480). Hb. Kew.

13. **Trichomanes pyxidiferum,** Linn.; Hook. Sp. Fil. i. p. 124; Hook. et Grev. Ic. Fil. t. 206; Hook. et Bak. Syn. Fil. p. 81.

Trichomanes olivaceum, Kunze teste Klotzsch, in Linnæa, xx. p. 437; Fourn. Mex. Pl. Enum. i. p. 60.
Trichomanes cavifolium, C. Müll. in Bot. Zeit. 1854, p. 753.

South Mexico, around Mexico (*Schmitz*), Orizaba (*Müller*, 1801; *Schaffner*), without locality (*Schaffner: cavifolium*); Guatemala, Chilasco (*Godman & Salvin: olivaceum*). —Very widely dispersed in the Tropics and southern Subtropics. Hb. Kew.

14. **Trichomanes radicans,** Swartz; Hook. et Bak. Syn. Fil. p. 81; Fourn. Mex. Pl. Enum. i. p. 60; Fée, 9e Mém. Foug.

Trichomanes scandens, Hedw. Gen. Fil. t. 6; Liebm. Mexicos Bregner, p. 143; Mart. et Gal. Foug. Mex. p. 81, vix Linn.
Trichomanes collariatum, Van den Bosch, Syn. Hymen. p. 28.
Trichomanes mexicanum, Van den Bosch, in Nederl. Arch. v. p. 164; Fourn. in Bull. Soc. Bot. France, xix. p. 249.

South Mexico, valley of Cordova (*Bourgeau*, 2001: *mexicanum*), near Jalapa (*Hahn: collariatum*), Orizaba (*Schaffner; Müller*, 10), Mirador (*Linden*, 80; *Liebmann*), Teapa Tabasco (*Linden*, 1508); Guatemala, Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 4; *Lévy*, 1508); Costa Rica, Volcan de Barba (*Hoffmann*); Panama, Coiba (*Seemann*, 647).—Very widely spread in both hemispheres. Hb. Kew.

15. **Trichomanes reptans,** Swartz; Hook. Sp. Fil. i. p. 116; Hook. et Grev. Ic. Fil. t. 32; Hook. et Bak. Syn. Fil. p. 74; Liebm. Mexicos Bregner, p. 142.

Didymoglossum reptans, Presl; Fourn. Mex. Pl. Enum. i. p. 60, excl. var. *β* et syn.
Trichomanes apodum, Hook. et Grev. Ic. Fil. t. 117, teste Fourn.

Mexico, without locality (*Schaffner*).—West Indies to Peru and Guiana.

16. **Trichomanes rigidum,** Swartz; Hook. Sp. Fil. i. p. 133; Liebm. Mexicos Bregner, p. 143; Fourn. Mex. Pl. Enum. i. p. 60.

South Mexico, Teotalcingo, Oaxaca, 4500 to 5000 feet (*Liebmann; Galeotti*, 6538); Guatemala, without locality (*Godman & Salvin*).—Very widely diffused in warm countries. Hb. Kew.

17. **Trichomanes scandens,** Linn.; Hook. Sp. Fil. i. p. 140; Hook. et Bak. Syn. Fil. p. 85.

Trichomanes lindeni, Presl, et *T. macroclados,* teste Hook.

South Mexico, Chiapas &c. (*Ghiesbreght,* 405); Guatemala, Mazatenango (*Bernoulli & Cario,* 369); Nicaragua (*Lévy,* 1481).—West Indies. Hb. Kew.

18. **Trichomanes sinuosum,** Rich.; Hook. Sp. Fil. i. p. 120; Hook. et Grev. Ic. Fil. t. 13; Hook. et Bak. Syn. Fil. p. 78; Fourn. Mex. Pl. Enum. i. p. 59; Liebm. Mexicos Bregner, p. 142.

South Mexico, near Orizaba (*Schaffner*), around the city of Mexico (*Schmitz*), Hacienda de Jovo (*Liebmann*); Guatemala, Choctum (*Godman & Salvin*).—West Indies to Peru and Brazil. Hb. Kew.

19. **Trichomanes spicatum,** Hedw.; Hook. Sp. Fil. i. p. 114, et Gard. Ferns, t. 60; Hook. et Bak. Syn. Fil. p. 72.

Panama (ex *Hooker & Baker*).—West Indies; Ecuador.

We find no specimen of this species from Panama in the Kew Herbarium.

20. **Trichomanes tenerum,** Spreng.; Hook. Sp. Fil. i. p. 141 (*angustatum*); Hook. et Grev. Ic. Fil. t. 166; Hook. et Bak. Syn. Fil. p. 85.

Guatemala, Cumbre de Atitlan (*Bernoulli,* 610), Escamillos, Costa Grande (*Bernoulli & Cario,* 386).—Colombia to Peru and Brazil and in Tristan da Cunha. Hb. Kew.

This species is recorded from Mexico in the 'Synopsis Filicum,' but there are no specimens in the Kew Herbarium.

21. **Trichomanes trichoideum,** Swartz; Hook. Sp. Fil. i. p. 141; Hook. et Grev. Ic. Fil. t. 199; Hook. et Bak. Syn. Fil. p. 85; Fourn. Mex. Pl. Enum. i. p. 59.

Trichomanes tenellum, Hedw. Gen. Fil. t. 3.

Trichomanes schiedeanum, C. Müll. in Bot. Zeit. 1844, p. 716; Fée, 9e Mém. Foug.

South Mexico, Coatepec near Jalapa (*Hahn*), near Oaxaca (*Schaffner*), Hacienda de Jovo (*Liebmann*), Jalapa 4000 feet (*Galeotti,* 6395), Vera Cruz to Orizaba (*Müller,* 1494); Guatemala, Chilasco (*Salvin & Godman*); Nicaragua, Chontales (*Lévy,* 1469).—West Indies to Ecuador and Brazil. Hb. Kew.

Tribe IV. DAVALLIEÆ.

Limited to the genera *Davallia* and *Cystopteris.*

10. DAVALLIA.

Davallia, Smith; Hook. et Bak. Syn. Fil. p. 88, et ed. 2, p. 467, t. 2. fig. 11.

About one hundred species; a large proportion of them restricted to Tropical Asia, and chiefly to the Malay Peninsula and Archipelago.

1. **Davallia (Microlepia) inæqualis,** Kunze; Hook. Sp. Fil. i. p. 180, excl. var. γ; Hook. et Bak. Syn. Fil. p. 99.

Microlepia boryana et *M. arcuata,* Fourn. Mex. Pl. Enum. i. p. 131.
Microlepia caudata et *M. galeottii,* Fée, 9e Mém. Foug.

South Mexico, Teotalcingo (*Galeotti*, 6526, 6527), Chiapas (*Ghiesbreght*, 355), Santa Rita near Misantla (*Hahn*).—West Indies to Peru and Rio Janeiro. Hb. Kew.

2. **Davallia (Microlepia) saccoloma,** Spreng.; Hook. Sp. Fil. i. p. 170; Hook. et Bak. Syn. Fil. p. 97.

Saccoloma elegans, Kaulf. Enum. Fil. p. 224, t. 1. fig. 12.

Guatemala, without locality (*Salvin & Godman*); Panama, Chagres (*Fendler*, 411).—West Indies to Rio Janeiro. Hb. Kew.

3. **Davallia (Stenoloma) schlechtendalii,** Presl; Hook. Sp. Fil. i. p. 189, t. 54 *e*; Hook. et Bak. Syn. Fil. p. 103.

Odontoloma schlechtendalii, Presl, Tent. p. 129; Fourn. Mex. Pl. Enum. i. p. 132.
Davallia divaricata, Ch. et Schl. in Linnæa, v. p. 617; Mart. et Gal. Foug. Mex. p. 77.

South Mexico, Totontepec, Oaxaca (*Liebmann*), Oaxaca at 3000 to 5000 feet (*Galeotti*, 6372), Teotalcingo (*Liebmann*), Tlapacoya (*Hahn*); Guatemala, Yzabal (*Bernoulli*, 875; *Godman & Salvin*). Hb. Kew.

4. **Davallia (Loxoscaphe) thecifera,** H. B. K.; Hook. et Bak. Syn. Fil. p. 100.

Davallia lindeni, Hook., *D. schimperi,* Hook., et *D. concinna,* Schrad.; Hook. Sp. Fil. i. p. 193.
Darea thecifera, Fourn. Mex. Pl. Enum. i. p. 132.
Asplenium theciferum, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 309.

South Mexico, region of Orizaba (*Bourgeau*, 3611); Panama (ex *Fournier*).—Colombia; Ecuador. Hb. Kew.

11. CYSTOPTERIS.

Cystopteris, Bernh.; Hook. et Bak. Syn. Fil. p. 103, t. 2. fig. 19.

Five species, one very widely spread in temperate and cold regions, and the rest are restricted to the north temperate and frigid zones.

1. **Cystopteris fragilis,** Bernh.; Hook. Sp. Fil. i. p. 197; Hook. et Bak. Syn. Fil. p. 103; Fourn. Mex. Pl. Enum. i. p. 101; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 342; Eaton, Ferns N. Am. ii. p. 49, t. 53, et in Proc. Am. Acad. xviii. p. 188; Liebm. Mexicos Bregner, p. 126.

Aspidium fragile, Swartz; Ch. et Schl. in Linnæa, v. p. 611; Mart. et Gal. Foug. Mex. p. 67.
Cystopteris fumarioides, Kunze, Fil. Pœpp. p. 97; Liebm. loc. cit.
Aspidium fumarioides, Presl, Reliq. Hænk. i. p. 39.
Cystopteris acuta, Fée, 9e Mém. Foug.

This is one of the most generally diffused ferns in temperate and cold regions, and

is very common in the mountains of Mexico, reaching an altitude of 12,500 feet on the peak of Orizaba (*Galeotti*, 6259); Guatemala, Alta Vera Paz (*Bernoulli & Cario*, 283). Hb. Kew.

Tribe V. LINDSAYEÆ.

This tribe consists of the genera *Lindsaya* and *Dictyoxiphium*.

12. LINDSAYA (often written *Lindsæa*).

Lindsaya, Dryander; Hook. et Bak. Syn. Fil. p. 104, et ed. 2, p. 471.

Fifty species, for the greater part in Tropical Asia and America, with a few scattered in most other tropical and some temperate regions.

1. **Lindsaya imbricata,** Liebm. Mexicos Bregner, p. 117; Fourn. Mex. Pl. Enum. i. p. 130.

South Mexico, San Pedro Tepinapa (*Liebmann*).

2. **Lindsaya portoricensis,** Desv. in Berl. Mag. v. p. 326, ex Fourn. Mex. Pl. Enum. i. p. 130.

Lindsaya guyanensis, Fée, 9e Mém. Foug.

South Mexico, Tepinapa in the region of Oaxaca (*Galeotti*, 6495).—Porto-Rico; Guiana.

3. **Lindsaya stricta,** Dryander; Hook. Sp. Fil. i. p. 216; Hook. et Bak. Syn. Fil. p. 108; Fourn. Mex. Pl. Enum. i. p. 130; Schkuhr, Fil. t. 114.

Lindsaya microphylla, Presl, Reliq. Hænk. i. p. 59, t. 10. fig. 2.
Lindsaya multifrondulosa, Fée, Gen. Fil. p. 105, t. 28, et 9e Mém. Foug.
Lindsaya elegans, Hook. Ic. Pl. t. 98.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 953), Cordillera of Oaxaca at 3000 feet (*Galeotti*, 6470); Panama (ex *Fournier*).—West Indies to Rio Janeiro. Hb. Kew.

4. **Lindsaya trapeziformis,** Dryander; Hook. Sp. Fil. i. p. 214, et Gen. Fil. t. 63 A; Hook. et Bak. Syn. Fil. p. 107.

Lindsaya quadrangularis, Raddi, Fil. Bras. p. 55, t. 74; Fourn. Mex. Pl. Enum. i. p. 130.
Lindsaya curvans, Fée, Gen. Fil. p. 106, et 9e Mém. Foug.
Lindsaya galeottii, Fée, Gen. Fil. p. 107, et 9e Mém. Foug.

South Mexico, Talea (*Galeotti*, 6469), Oaxaca (*Galeotti*, 6489; *Franco*); Guatemala, Yzabal (*Godman & Salvin*); Panama, Chagres (*Fendler*, 412).—West Indies to Colombia and Brazil; and Tropical Asia. Hb. Kew.

13. DICTYOXIPHIUM.

Dictyoxiphium, Hook.; Hook. et Bak. Syn. Fil. p. 113.

A monotype.

1. **Dictyoxiphium panamense,** Hook. Gen. Fil. t. 62, et Sp. Fil. i. p. 224

Hook. et Bak. Syn. Fil. p. 113 ; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 239 ; Fourn. in Bull. Soc. Bot. France, xix. p. 259.

Amphiblestra simplex, Fourn. in Bot. Zeit. 1873, p. 8, teste Hook. et Bak.

GUATEMALA, Choctum (*Godman & Salvin*) ; NICARAGUA, Chontales (*Tate*, 119 ; *Lévy*, 452) ; PANAMA, without locality (*Cuming*, 1124), Coiba (*Seemann*, 363).—VENEZUELA ; COLOMBIA. Hb. Kew.

Tribe VI. PTERIDEÆ.

Thirteen genera are referred to this Tribe, which is spread over nearly the whole area of the Order.

14. ADIANTUM.

Adiantum, Linn. ; Hook. et Bak. Syn. Fil. p. 113, et ed. 2, p. 472, t. 2. fig. 21.

Eighty species, a very large proportion of which are endemic in Tropical America, yet the genus is generally spread, except in the frigid zones.

1. **Adiantum braunii,** Mett. in Linnæa, xxxvi. p. 75.

MEXICO (*Karwinski ; Berlandier ; Leiboldt*).

2. **Adiantum capillus-veneris,** Linn. ; Hook. Sp. Fil. ii. p. 36 ; Hook. et Bak. Syn. Fil. p. 123 ; Liebm. Mexicos Bregner, p. 115 ; Fourn. Mex. Pl. Enum. i. p. 127 ; Eaton, Ferns N. Am. i. p. 281, t. 37, et in Proc. Am. Acad. xviii. p. 187.

Adiantum tenerum, var. *dissectum,* Mart. et Gal. Foug. Mex. p. 71.

Adiantum trapeziforme, Schkuhr, Crypt. t. 121, non Linn.

Very widely diffused in TEMPERATE REGIONS throughout the world, including the mountains of MEXICO, where it occurs up to an altitude of 10,000 feet on the peak of Orizaba. Hb. Kew.

3. **Adiantum æthiopicum,** Linn. ; Hook. Sp. Fil. ii. p. 37, t. 77 ; Hook. et Bak. Syn. Fil. p. 123.

Adiantum thalictroides, Willd. ; Fée, 9^{e} Mém. Foug. ; Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 298 ; Fourn. Mex. Pl. Enum. i. p. 127 ; Eaton in Proc. Am. Acad. xviii. p. 186.

Adiantum crenatum, Poiret, var. *glabrescens,* Mett. teste Kuhn, Beitr. p. 7.

Adiantum pellucidum, Mart. et Gal. Foug. Mex. p. 72.

Adiantum gratum, Fée, 9^{e} Mém. Foug.

Adiantum tenerum, Liebm. Mexicos Bregner, p. 115 partim, ex Fourn. loc. cit.

Adiantum lobatum, Presl, Reliq. Hænk. i. p. 62, t. 10. fig. 5 ?

Very widely spread in TEMPERATE REGIONS, including MEXICO. Hb. Kew.

4. **Adiantum concinnum,** H. B. K. Nov. Gen. et Sp. i. p. 17, et vii. t. 668 ; Presl, Reliq. Hænk. i. p. 63 ; Liebm. Mexicos Bregner, p. 115 ; Hook. et Bak. Syn. Fil. p. 123 ; Fourn. Mex. Pl. Enum. i. p. 126 ; Bak. in Journ. Bot. 1884, p. 362.

Adiantum affine, Mart. et Gal. Foug. Mex. p. 70, non Willd.

Adiantum lutescens, Moug. in Fée, Gen. Fil. p. 119.

NORTH MEXICO, Sierra Madre (*Seemann*), San Luis Potosi (*Virlet d'Aoust*) ; SOUTH

Mexico, Pedregal (*Schmitz*), region of Orizaba (*Müller*, 732; *Bourgeau*, 2886), Mirador (*Linden*, 181), Jalapa 4000 feet and Guadalaxara 3000 feet (*Galeotti*, 6318, 6436), Chiapas &c. (*Ghiesbreght*, 263); Guatemala, Jocotenango (*Bernoulli*, 251), Volcan de Fuego (*Godman & Salvin*); Nicaragua, Granada and Omotepe (*Lévy*, 395, 1149); Costa Rica (*Harrison*); Panama, Santiago de Veraguas and ruins of Old Panama (*Seemann*, 16).—West Indies to Peru and Brazil. Hb. Kew.

5. **Adiantum convolutum,** Fourn. Mex. Pl. Enum. i. p. 127, t. 6; Hook. et Bak. Syn. Fil. ed. 2, p. 474.

South Mexico, without locality (*Ghiesbreght*); Orizaba (*Botteri*, 3602).

6. **Adiantum cristatum,** Linn.; Hook. Sp. Fil. ii. p. 46; Hook. et Bak. Syn. Fil. p. 118.

Adiantum striatum, Swartz; Fourn. in Bull. Soc. Bot. France, xix. p. 259.

Nicaragua, Chontales (*Lévy*, 489 bis).—West Indies; Venezuela.

7. **Adiantum curvatum,** Kaulf.; Hook. Sp. Fil. ii. p. 29, t. 84 c; Hook. et Bak. Syn. Fil. p. 126.

Adiantum brasiliense, Raddi, Fil. Bras. p. 57, t. 76.

Adiantum tetraphyllum, γ. obtusum, Mett. ex Fourn. Mex. Pl. Enum. i. p. 129?

South Mexico, Teapa (*Linden*), forest of Chiquihite (*Bourgeau*, 2146).—Brazil. Hb. Kew.

8. **Adiantum (Howardia) dolosum,** Kunze in Linnæa, xxi. p. 219; Hook. Sp. Fil. ii. p. 6, t. 79; Hook. et Bak. Sp. Fil. p. 127; Fourn. in Bull. Soc. Bot. France, xix. p. 259. (Tab. CVII. Fig 1, portion of pinna bearing sori, enlarged.)

Adiantum wilsoni, Hook. Sp. Fil. ii. p. 6; Hook. Fil. Exot. t. 13.

Guatemala, Choctum (*Salvin & Godman*); Nicaragua, Chontales (*Lévy*, 492; *Tate*, 9).—West Indies; Colombia; Guiana; Brazil. Hb. Kew.

We should not have figured this species had we not overlooked the beautiful plate in the 'Filices Exoticæ.'

9. **Adiantum excisum,** Kunze, Anal. Pterid. p. 33, t. 21, non Mart. et Gal. ex Fourn. Mex. Pl. Enum. i. p. 128; Hook. et Bak. Syn. Fil. p. 123?

South Mexico, San Rafael (*Guillemin*); Panama (*Wagner*).—Chili.

10. **Adiantum feei,** Thos. Moore; Hook. et Bak. Syn. Fil. p. 125; Fourn. Mex. Pl. Enum. i. p. 127.

Adiantum flexuosum, Hook. 2nd Cent. Ferns, t. 61.

South Mexico, Orizaba (*Schaffner*); Guatemala, Santa Rosa and Coban (*Godman & Salvin*). Hb. Kew.

11. **Adiantum galeottianum,** Hook. Sp. Fil. ii. p. 10, t. 80 B; Hook. et Bak. Syn. Fil. p. 116; Fourn. Mex. Pl. Enum. i. p. 126, excl. syn.

South Mexico, Oaxaca at 3000 feet (*Galeotti*, 6561). Hb. Kew.

12. **Adiantum glaucophyllum,** Hook. Sp. Fil. ii. p. 40; Hook. et Bak. Syn. Fil. p. 124.

Adiantum multiforme, Braun, ex Fourn. Mex. Pl. Enum. i. p. 128, var. *α* et *β*.
Adiantum extensum, Fée, Gen. Fil. p. 119, et 9e Mém. Foug.
Adiantum cuneatum, Liebm. Mexicos Bregner, p. 114, non Langsd. et Fisch. ex Fourn.
Adiantum mexicanum, Presl, Tent. p. 158.
Adiantum amplum, Presl, Reliq. i. p. 63.
Adiantum amabile, Liebm., et *A. andicolum,* Liebm. Mexicos Bregner, pp. 113 et 114.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, peak of Orizaba at 9500 to 9750 feet, and Oaxaca at 8000 feet (*Galeotti*, 6266, 6566; *Linden*, 48: *multiforme β*), San Nicolas (*Bourgeau*, 1044), Sierra San Pedro Nolasco &c. (*Jurgensen*, 322: *andicola*), Cordillera of Oaxaca at 8000 to 8500 feet (*Galeotti*, 6359: *amabile*), Chiapas &c. (*Ghiesbreght*, 238), valley of Mexico (*Schaffner*); Guatemala, Volcan de Fuego (*Godman & Salvin*); Panama, Boquete, Veraguas (*Seemann*). Hb. Kew.

13. **Adiantum hirtum,** Klotzsch; Hook. Sp. Fil. ii. p. 20, t. 82 A; Hook. et Bak. Syn. Fil. p. 119.

Panama (*Seemann*, 379).—Colombia to Peru, Guiana, and Brazil. Hb. Kew.

[*Adiantum incisum*, Presl, Reliq. Hænk. i. p. 61; Hook. et Bak. Syn. Fil. p. 122, is erroneously recorded as Mexican, according to Fournier; and there are no Mexican specimens at Kew.]

14. **Adiantum intermedium,** Swartz; Hook. Sp. Fil. ii. p. 25; Hook. et Bak. Syn. Fil. p. 116; Griseb. Cat. Cub. Pl. p. 274; Bak. in Journ. Bot. 1884, p. 362.

Adiantum lucidum, var. *β. pinnatum,* Mitt. ex Fourn. Mex. Pl. Enum. i. p. 129.
Adiantum triangulatum, Kaulf. Enum. Fil. p. 204.

South Mexico, Oaxaca 3000 feet (*Galeotti*, 6491), Chiapas (*Ghiesbreght*, 261); Guatemala, Yzabal (*Godman & Salvin*); Costa Rica (*Harrison*); Panama, Chagres (*Fendler*, 414).—West Indies to Peru and Rio Janeiro. Hb. Kew.

15. **Adiantum kaulfussii,** Kunze; Hook. Sp. Fil. ii. p. 7; Hook. et Grev. Ic. Fil. t. 190; Hook. et Bak. Syn. Fil. p. 115; Bak. in Journ. Bot. 1884, p. 362.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 787), Chiapas &c. (*Ghiesbreght*, 412); Guatemala, Choctum (*Godman & Salvin*); Yzabal and Cuyotenango (*Bernoulli*, 589, 900); Nicaragua, Chontales (*Tate*, 392; *Lévy*, 496); Costa Rica (*Harrison*).—West Indies to Peru and Brazil. Hb. Kew.

16. **Adiantum lucidum,** Swartz; Hook. Sp. Fil. ii. p. 4, t. 79 c; Hook. et Bak. Syn. Fil. p. 121.

Adiantum lucidum, a. pinnatum, Fourn. Mex. Pl. Enum. i. p. 129?

South Mexico, Teapa (*Linden*), Oaxaca (*Galeotti*, 6487, 6492)?; Nicaragua, Chon-

tales (*Tate*); Panama, Chagres (*Fendler*, 409), Empire Station (*S. Hayes*, 259).—West Indies to Brazil. Hb. Kew.

17. **Adiantum lunulatum,** Burm.; Hook. Sp. Fil. ii. p. 11; Hook. et Grev. Ic. Fil. t. 104; Hook. et Bak. Syn. Fil. p. 114; Fourn. Mex. Pl. Enum. i. p. 126.

Adiantum lunatum, Cav. Præl. p. 676, ex Fourn.

Adiantum dolabriforme, Hook. Ic. Pl. t. 191; Fourn. in Bull. Soc. Bot. France, xix. p. 258.

Adiantum filiforme, Gardn. in Hook. Ic. Pl. t. 503.

South Mexico, without locality (*Ghiesbreght*), Acapulco (*Née*); Guatemala, Mazatenango (*Bernoulli*, 547); Nicaragua, near Granada (*Lévy*, 175); Panama, Chagres (*Fendler*, 415), Paraiso (*S. Hayes*, 272), near Panama (*Seemann*).—West Indies to Brazil, and Tropical Asia, Africa, and Australia. Hb. Kew.

18. **Adiantum macrophyllum,** Swartz; Hook. Sp. Fil. ii. p. 3; Hook. et Grev. Ic. Fil. t. 132; Hook. Fil. Exot. t. 55; Fourn. Mex. Pl. Enum. i. p. 129; Bak. in Journ. Bot. 1884, p. 362.

South Mexico, near the Atoyac (*Bourgeau*, 2151), Cordillera of Vera Cruz (*Galeotti*, 6278), Chiapas &c. (*Ghiesbreght*, 384); Guatemala, Choctum (*Godman & Salvin*), Vera Paz (*Salvin*); Nicaragua, Chontales (*Tate*, 393; *Lévy*, 494); Costa Rica (*Harrison*); Panama, Bojio (*S. Hayes*, 354).—West Indies to Ecuador and Brazil. Hb. Kew.

19. **Adiantum obliquum,** Willd.; Hook. Sp. Fil. ii. p. 8, t. 79 A; Hook. et Bak. Syn. Fil. p. 115; Fourn. in Bull. Soc. Bot. France, xix. p. 259.

Guatemala, Yzabal (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*); Panama, Chagres (*Fendler*, 410), Empire Station (*S. Hayes*, 260).—West Indies; Colombia; Guiana. Hb. Kew.

20. **Adiantum patens,** Willd.; Hook. Sp. Fil. ii. p. 29, t. 87 A; Hook. et Bak. Syn. Fil. p. 126; Fourn. Mex. Pl. Enum. i. p. 126; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 342.

North Mexico, Sierra Madre (*Seemann*, 1949), Cerro de Pinal (*Seemann*, 1448); South Mexico, without locality (*Parkinson*), Acapulco (*Beechey*), Curucupatzea (*Glennie*); Guatemala, Motagua valley (*Godman & Salvin*); Panama, Veraguas (*Seemann*).—Colombia to Ecuador and in the Galapagos. Hb. Kew.

21. **Adiantum pilosum,** Fée; Rémy in Gay, Fl. Chil. vi. p. 485, ex Fourn. Mex. Pl. Enum. i. p. 126.

South Mexico, in temperate regions (*Ghiesbreght*, 418).—Chili.

22. **Adiantum pulverulentum,** Linn.; Hook. Sp. Fil. ii. p. 17; Hook. et Bak. Syn. Fil. p. 122; Fourn. Mex. Pl. Enum. i. p. 129, et in Bull. Soc. Bot. France, xix. p. 259; Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 297.

South Mexco, barranca de San Martin 4800 feet (*Schaffner*), Teapa (*Linden*), in the eastern cordillera (*Galeotti*, 6303), Oaxaca (*Sallé; Galeotti*, 6490); Panama (ex *Mettenius*).—West Indies to Colombia and Brazil. Hb. Kew.

23. **Adiantum scabrum,** Kaulf. Enum. Fil. p. 207; Fourn. Mex. Pl. Enum. i. p. 127.

Adiantum tricholepis, Fée, 8e Mém. Foug. p. 72; Eaton, Ferns N. Am. p. 103, t. 59. figg. 6–10.
Adiantum concinnum, Mart. et Gal. Foug. Mex. p. 73, non H. B. K.
Adiantum fragile, Mart. et Gal. loc. cit. p. 72, non Swartz.
Adiantum chilense, β. pilosulum, Liebm. Mexicos Bregner, p. 115.

Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Papantla (*Liebmann*), Real del Monte (*Galeotti*, 6447), Orizaba (*Bourgeau*, 2341 bis), Guadalaxara (*Galeotti*, 6445).—Brazil; Chili.

The synonymy and distribution of this species is wholly from Fournier, who also doubtingly refers *A. chilense*, Kaulf., to the same. Most likely *A. scabrum* is included in some other species in the Kew collection.

24. **Adiantum schaffneri,** Fourn. in Bull. Soc. Bot. France, xxvii. p. 328, absque descript.

Mexico, without locality (*Schaffner*).

25. **Adiantum shepherdi,** Hook. Sp. Fil. ii. p. 9, t. 73 β; Hook. et Bak. Syn. Fil. p. 116; Fourn. Mex. Pl. Enum. i. p. 126.

South Mexico, without locality (*Bates*), in temperate regions (*Ghiesbreght*), Morelia (*Glennie*). Hb. Kew.

26. **Adiantum seemanni,** Hook. Sp. Fil. ii. p. 5, t. 81 A; Hook. et Bak. Syn. Fil. p. 121; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 233.

Guatemala, without locality (*Godman & Salvin*), near Mazatenango (*Bernoulli*, 401); Panama, San Lorenzo, Veraguas (*Seemann*, 1124). Hb. Kew.

27. **Adiantum tenerum,** Swartz; Hook. Sp. Fil. ii. p. 45; Hook. et Bak. Syn. Fil. p. 124; Fourn. Mex. Pl. Enum. i. p. 127; Fourn. in Bull. Soc. Bot. France, xix. p. 259; Eaton in Proc. Am. Acad. xviii. p. 188, et Ferns N. Am. ii. p. 231, t. 77.

Adiantum trapezoides, Fée, Gen. Fil. p. 107; Fourn. loc. cit. p. 128.

Florida.—North Mexico, Guajuco Nuevo Leon (*Palmer*), Sierra Madre (*Seemann*, 1947), San Luis Potosi (*Virlet d'Aoust*); South Mexico, region of Orizaba (*Bourgeau*, 2341), valley of Cordova (*Bourgeau*, 2107); Guatemala, San Gerónimo (*Godman & Salvin*); Nicaragua, Los Fuentes, near Granada (*Lévy*, 367); Panama, Veraguas (*Seemann*).—Colombia to Peru and Juan Fernandez. Hb. Kew.

28. **Adiantum tetraphyllum,** Willd.; Hook. et Bak. Syn. Fil. p. 120; Fourn. Mex. Pl. Enum. i. p. 129, quoad α et β, majus; Liebm. Mexicos Bregner, p. 112; Bak. in Journ. Bot. 1884, p. 362.

Adiantum prionophyllum, H. B. K. Nov. Gen. et Sp. i. p. 16; Hook. Sp. Fil. ii. p. 21.
Adiantum fructuosum, Sprengel; Kunze, Farrnkr. p. 28, t. 15; Hook. Sp. Fil. ii. p. 24; Mart. et Gal. Foug. Mex. p. 69.
Adiantum villosum, Mart. et Gal. loc. cit., non Linn., teste Fourn.

South Mexico, Lobani (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 418, 419, 448), cordillera of Vera Cruz (*Galeotti*, 6300), valley of Cordova (*Bourgeau*, 2171); Guatemala, Choctum (*Godman & Salvin*), Mazatenango (*Bernoulli*, 440); Nicaragua, Chontales (*Tate*, 12); Costa Rica (*Harrison*); Panama, Chagres (*Fendler*, 413).—West Indies to Brazil and in West Tropical Africa. Hb. Kew.

29. **Adiantum trapeziforme,** Linn.; Hook. Sp. Fil. ii. p. 33; Hook. et Bak. Sp. Fil. p. 118; Fourn. Mex. Pl. Enum. i. p. 128, et in Bull. Soc. Bot. France, xix. p. 259.

Adiantum pentadactylon, Langsd. et Fisch.; Hook. et Grev. Ic. Fil. t. 98.

South Mexico, Acasonica, Vera Cruz (*Linden*, 73), cordillera of Vera Cruz at 2000 feet (*Galeotti*, 6338), Chiapas (*Ghiesbreght*, 399); Guatemala, without locality (*Skinner*); Nicaragua, Granada (*Lévy*, 367 bis).—West Indies to Brazil. Hb. Kew.

30. **Adiantum villosum,** Linn.; Hook. Sp. Fil. ii. p. 18; Hook. et Bak. Syn. Fil. p. 122.

Adiantum falcatum, Swartz, Sp. Fil. p. 19.

Adiantum acuminatum, Desv., et *A. oblique-truncatum,* Fée?; Fourn. in Bull. Soc. Bot. France, xix. p. 259.

Nicaragua, Chontales (*Lévy*, 490 bis); Panama (*Cuming*, 1203).—West Indies to Brazil. Hb. Kew.

15. HYPOLEPIS.

Hypolepis, Bernh.; Hook. et Bak. Syn. Fil. p. 128, t. 2. fig. 24.

About a dozen species, mainly Tropical American; but the genus is widely scattered, though wanting in Europe and Temperate Asia.

1. **Hypolepis californica,** Hook. Sp. Fil. ii. p. 71, t. 88; Hook. et Bak. Syn. Fil. p. 131.

Cheilanthes californica, Meth. Cheil. p. 44; Eaton, Ferns N. Am. i. p. 45, t. 6. fig. 2.

California.—North Mexico, Sonora (ex *Eaton*).

2. **Hypolepis hostilis,** Presl; Hook. Sp. Fil. ii. p. 69; Hook. et Bak. Syn. Fil. p. 130.

Cocos Island (*Barclay*).—Jamaica; Peru. Hb. Kew.

3. **Hypolepis parallelogramma,** Hook. Sp. Fil. ii. p. 65, t. 98 A; Hook. et Bak. Syn. Fil. p. 130.

Cheilanthes parallelogramma, Kunze in Linnæa, ix. p. 83.

Cheilanthes scabra, Karst, et *C. radula,* Kunze teste Bak. loc. cit.

Guatemala, Choctum (*Godman & Salvin*).—Southward to Peru and Brazil. Hb. Kew.

4. **Hypolepis repens,** Presl; Hook. Sp. Fil. ii. p. 64, t. 90 c; Hook. et Bak. Syn. Fil. p. 129.

Cheilanthes repens, Kaulf. Enum. Fil. p. 215.

Hypolepis mexicana, Liebm. Mexicos Bregner, p. 108; Fourn. Mex. Pl. Enum. i. p. 126.

South Mexico, region of Orizaba (*Bourgeau*, 2343), Oaxaca 4000 to 5000 feet (*Liebmann*), Chiapas (*Ghiesbreght*, 230, 366).—West Indies to Brazil and Peru. Hb. Kew.

16. CHEILANTHES.

Cheilanthes, Swartz; Hook. et Bak. Syn. Fil. p. 131, et ed. 2, p. 475, t. 3. fig. 25.

About sixty-five species, having by far their greatest concentration in America, though spread over nearly all tropical and most temperate countries.

1. **Cheilanthes allosuroides,** Mett. Cheil. p. 32; Hook. et Bak. Syn. Fil. p. 137; Fourn. Mex. Pl. Enum. i. p. 123.

South Mexico, around Mexico (*Schmitz; Schaffner*), Santa Maria, near Mexico (*Hahn*), Orizaba (*Schaffner*). Hb. Kew.

2. **Cheilanthes aurantiaca,** Thos. Moore; Hook. et Bak. Syn. Fil. p. 141.

Allosorus ochraceus, Hook. in Benth. Pl. Hartw. p. 55; Hook. Ic. Pl. t. 904.

Cheilanthes ochraceus, Hook. Sp. Fl. ii. p. 114.

Pteris lutea, Cav. Præl. p. 267.

Aleuritopteris lutea, Fourn. Mex. Pl. Enum. i. p. 121.

South Mexico, Morelia (*Hartweg*). Hb. Kew.

3. **Cheilanthes aurea,** Hook. et Bak. Syn. Fil. ed. 2, p. 476. (Tab. CVI. B. Fig. 2, segment of a pinnule, enlarged; 3, smaller portion, further enlarged, showing sori.)

Guatemala, Motagua valley (*Godman & Salvin*). Hb. Kew.

4. **Cheilanthes cheiloglyphis,** Hemsl.

Myriopteris cheiloglyphis, Fée, 8e Mém. Foug. p. 77; Fourn. Mex. Pl. Enum. i. p. 125.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, region of Orizaba at 7000 feet (*Schaffner; Müller*, 532).

[*Cheilanthes eatoni*, Bak.; Eaton, Ferns N. Am. i. p. 349, t. 45. figg. 6–12, is found close on our North-western border, if not actually within it.]

5. **Cheilanthes cinnamomea,** Eaton in Proc. Am. Acad. xviii. p. 186.

Myriopteris rufa, Fée, 8e Mém. Foug. p. 77, teste Eaton.

North Mexico, San Miguelito and San Rafael Mountains, San Luis Potosi (*Schaffner*, 911, 914). Hb. Kew.

6. **Cheilanthes clevelandi,** Eaton in Bull. Torr. Bot. Club, vi. p. 33, Ferns N. Am. i. p. 89, t. 12. fig. 2, et in Proc. Am. Acad. xviii. p. 186.

California.—North Mexico, Escobrillos Mountains, San Luis Potosi (*Schaffner*, 913). Hb. Kew.

7. **Cheilanthes cooperæ,** Eaton in Bull. Torr. Bot. Club, vi. (1875), p. 33, Ferns N. Am. i. p. 7, t. 2. fig. 1, et in Proc. Am. Acad. xviii. p. 185.

California.—North Mexico, region of San Luis Potosi (*Parry & Palmer*, 989). Hb. Kew.

8. **Cheilanthes farinosa,** Kaulf. Enum. Fil. p. 212; Hook. Sp. Fil. ii. p. 77; Hook. et Grev. Ic. Fil. t. 134; Bot. Mag. t. 4765; Hook. et Bak. Syn. Fil. p. 142; Eaton in Proc. Am. Acad. xviii. p. 186.

Aleuritopteris farinosa et *A. preslii,* Fourn. Mex. Pl. Enum. i. p. 121.

Aleuritopteris mexicana et *A. pulveracea,* Fée, Gen. Fil. p. 154, et 8e Mém. Foug. p. 117.

Cheilanthes pulveracea, Presl, Reliq. Hænk. i. p. 64; Hook. Sp. Fil. ii. p. 78; Mexicos Bregner, p. 105.

North Mexico, in the San Rafael Mountains, San Luis Potosi (*Schaffner*, 963); South Mexico, Chinantla 7000 to 8000 feet (*Liebmann*), Oaxaca 5000 feet (*Galeotti*, 6551), valley of Mexico (*Bourgeau*, 915 bis; *Schaffner; Schmitz*), Chiapas &c. (*Ghiesbreght*, 228); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Colombia to Brazil and in Asia and Africa, chiefly in mountainous districts within the Tropics. Hb. Kew.

9. **Cheilanthes fendleri,** Hook. Sp. Fil. ii. p. 103, t. 107 B; Hook. et Bak. Syn. Fil. p. 139.

Myriopteris fendleri, Fourn. Mex. Pl. Enum. i. p. 125.

Rocky Mountains to New Mexico.—South Mexico, valley of Mexico (ex *Fournier*).

10. **Cheilanthes gracillima,** Eaton in Foss. Bot. U. S. & Mex. Bound. Surv. p. 234, Ferns N. Am. ii. p. 247, t. 79. figg. 17–21, et in Proc. Am. Acad. xviii. p. 186; Hook. et Bak. Syst. Fil. p. 139.

Cheilanthes vestita, Brackenridge, Fil. U. S. Expl. Exped. p. 91, non Swartz.

Canada and British Colombia to California and Texas.—North Mexico, in the Sierra Madre, south of Saltillo (*Palmer*, 1390). Hb. Kew.

This species is recorded from Guatemala in Hooker and Baker's 'Synopsis Filicum;' but there is no specimen thence in the Kew Herbarium.

[*C. hirsuta*, Link, Hort. Berol. ii. p. 40, reported from Mexico, is an obscure species.]

11. **Cheilanthes lendigera,** Swartz; Hook. Sp. Fil. ii. p. 95, t. 104 B, cum β, t. 106 A; Hook. et Bak. Syn. Fil. p. 141; Mart. et Gal. Foug. Mex. p. 74.

Cheilanthes minor et *C. lanuginosa,* Mart. et Gal. loc. cit. p. 75, t. 20. fig. 2, et t. 21. fig. 1.

Myriopteris marsupianthes et *M. villosa,* Fée, Gen. Fil. p. 149, t. 12 et 28; Fourn. Mex. Pl. Enum. i. p. 124.

Myriopteris lanuginosa, Fourn. loc. cit. p. 125.

Arizona.—South Mexico, Chinantla Puebla, and peak of Orizaba 9500 to 10,000 feet (*Liebmann; Galeotti*, 6256), Cuernavaca (*Bilimek*), near Mexico (*Schaffner*), Vaqueria del Jacal 10,000 feet (*Liebmann: Myriopteris marsupianthes*), peak of Orizaba at 11,500 feet (*Galeotti*, 6257: *C. minor*); Guatemala, Dueñas (*Godman & Salvin*).—Colombia. Hb. Kew.

12. **Cheilanthes leucopoda,** Link, Sp. Fil. p. 66 ; Klotsch in Linnæa, xx. p. 338 ; Mett. Cheil. p. 30 ; Fourn. Mex. Pl. Enum. i. p. 123 ; Eaton, Ferns N. Am. ii. p. 29, t. 49.

Cheilanthes glandulifera, Liebm. Mexicos Bregner, p. 106, teste Mettenius.

Texas.—North Mexico, San Luis Potosi (*Virlet d'Aoust*) ; South Mexico, Oaxaca 4000 to 5000 feet (*Liebmann*), without locality (*Ehrenberg*).

13. **Cheilanthes lindheimeri,** Hook. Sp. Fil. ii. p. 101, t. 107 A ; Hook. et Bak. Syn. Fil. p. 140 ; Fourn. Mex. Pl. Enum. i. p. 125 ; Eaton, Ferns N. Am. ii. p. 213, et in Proc. Am. Acad. xviii. p. 186.

Myriopteris lindheimeri, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 340.

Texas ; New Mexico.—North Mexico, Escobrillos Mountains, San Luis Potosi (*Schaffner*, 937 ; *Parry & Palmer*, 999), Sierra Madre (*Seemann*, 1934). Hb. Kew.

14. **Cheilanthes meifolia,** Eaton in Proc. Am. Acad. xviii. p. 185.

North Mexico, Guajuco, Nuevo Leon (*Palmer*, 1377). Hb. Kew.

15. **Cheilanthes microphylla,** Swartz ; Hook. Sp. Fil. ii. p. 84, t. 98 A ; Hook. et Bak. Syn. Fil. p. 135 ; Fourn. Mex. Pl. Enum. i. p. 123 ; Eaton, Ferns N. Am. p. 81, et in Proc. Am. Acad. xviii. p. 185.

Cheilanthes elongata, Willd. ; Kaulf. Enum. Fil. p. 213 ; Kuhn, Beitr. Mex. Farrnfl. p. 8.
Cheilanthes moritziana, Kunze in Linnæa, xxiii. p. 307 ; Hook. Sp. Fil. ii. p. 85, t. 99 B.
Cheilanthes seemanni, Hook. Sp. Fil. ii. p. 85, t. 97 B.
Cheilanthes alabamensis, Fée, 9e Mém. Foug., teste Fourn.
Cheilanthes micromera, Link, Hort. Berol. ii. p. 36 ; Mart. et Gal. Foug. Mex. p. 76.
Allosorus microphyllus, Liebm. Mexicos Bregner, p. 67.
Cheilanthes pubescens, H. B. K. Nov. Gen. et Sp. i. p. 21.
Cheilanthes aspidioides, Fée, et *C. cucullans,* Fée, Gen. Fil. p. 157, et 7e Mém. Foug. p. 39, t. 35. fig. 4.
Cheilanthes pygmæa, Klotzsch in Linnæa, xx. p. 338.

Florida ; New Mexico.—North Mexico, many stations in Coahuila, Nuevo Leon, and San Luis Potosi (*Parry & Palmer*), Sierra Madre (*Seemann*, 1931 : *seemanni*) ; South Mexico, region of Orizaba (*Bourgeau*, 2782, 2339), Belen, Tacubaya (*Schaffner*), Chiapas &c. (*Ghiesbreght*, 234), Yavezia (*Liebmann*), Oaxaca at 8000 feet (*Galeotti*, 6564), Real del Monte (*Coulter*, 1678) ; Guatemala, Alotenango (*Godman & Salvin*).—West Indies to Peru. Hb. Kew.

16. **Cheilanthes myriophylla,** Desv. ; Hook. Sp. Fil. ii. p. 100, t. 105 A ; Hook. et Bak. Syn. Fil. p. 140 ; Eaton, Ferns N. Am. ii. p. 243, t. 79. figg. 8–15, et in Proc. Am. Acad. xviii. p. 186.

Myriopteris myriophylla, J. Sm. in Seem. Bot. Voy. 'Herald,' pp. 233 et 340 ; Fourn. Mex. Pl. Enum. i. p. 125.
Myriopteris paleacea, Fée, Gen. Fil. 149, et 8e Mém. Foug. p. 115.
Cheilanthes elegans, Desv. in Berl. Mag. 1811, p. 328, et Journ. de Bot. 1813, ii. p. 43, t. 13. fig. 2.

Myriopteris elegans, Fourn. Mex. Pl. Enum. i. p. 125.
Cheilanthes paleacea, Mart. et Gal. Foug. Mex. p. 76, t. 21. fig. 2.

North Mexico, Escobrillos Mountains, Morales and San Miguelito Mountains, San Luis Potosi (*Parry & Palmer*, 987, 988; *Schaffner*, 912, 915, 916), San Luis Potosi (*Virlet d'Aoust*); South Mexico, around Mexico (*Schmitz*), Oaxaca (*Andrieux*, 44), Pedregal (*Bourgeau*, 256), near Chapultepec (*Schaffner*), Misteca Alta at 7500 feet, and Barranca de Guadalupe (*Galeotti*, 6381, 6437); Guatemala, Quezaltenango (*Godman & Salvin*).—Southward to Peru and Chili, and in the Neilgherries. Hb. Kew.

[*Plecosorus peruvianus*, Fée, Gen. Fil. p. 151, a plant apparently not taken up in the 'Synopsis Filicum,' is recorded from Mexico by Fournier.]

17. **Cheilanthes radiata,** J. Sm. in Hook. Journ. Bot. iv. p. 159; Hook. et Bak. Syn. Fil. p. 132; Mett. Cheil. p. 42.
Adiantopsis radiata, Fée, Gen. Fil. p. 145; Fourn. Mex. Pl. Enum. i. p. 126.
Adiantum radiatum, Linn.; Ch. et Schl. in Linnæa, v. p. 615; Mart. et Gal. Foug. Mex. p. 69; Liebm. Mexicos Bregner, p. 112.
Hypolepis radiata, Hook. Sp. Fil. ii. p. 72, t. 91 A.

South Mexico, Jalapa 3000 feet (*Galeotti*, 6400), on the Rio Nantla, Vera Cruz (*Liebmann*), Mirador (*Sartorius*), Amatlan in the valley of Cordova (*Bourgeau*, 2227), Hacienda de la Laguna (*Schiede & Deppe*); Guatemala, Retalhuleu (*Bernoulli & Cario*, 376), Motagua valley (*Godman & Salvin*); Nicaragua, Chontales (*Seemann*, 198).—West Indies to Peru and Rio Janeiro. Hb. Kew.

18. **Cheilanthes scariosa,** Presl, Reliq. Hænk. i. p. 65; Hook. Sp. Fil. ii. p. 99, t. 104 A; Hook. et Bak. Syn. Fil. p. 140.
Myriopteris scariosa, Fée, Gen. Fil. p. 149; Fourn. Mex. Pl. Enum. i. p. 125.

South Mexico, Orizaba at 12,000 feet (*Galeotti*, 6258).—Peru.

There is no Mexican specimen of this species in the Kew Herbarium, and Galeotti's number 6258, as far as the Kew specimen is concerned, belongs to the next species.

19. **Cheilanthes speciosissima,** A. Br.; Hook. Sp. Fil. ii. p. 103; Hook. et Bak. Syn. Fil. p. 141; Liebm. Mexicos Bregner, p. 105; Benth. Pl. Hartw. p. 54.
Plecosorus mexicanus, Fée, Gen. Fil. p. 151, t. 13; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 341; Fourn. Mex. Pl. Enum. i. p. 124.
Cheilanthes scariosa, Mart. et Gal. Foug. Mex. p. 74, non Presl.
Phegopteris speciosissima, Mett. Cheil. p. 4.

South Mexico, forest of the Desierto Viejo (*Bourgeau*, 924), around Mexico (*Schmitz*), Coscomatepec, Vera Cruz 5000 feet (*Schaffner*), peak of Orizaba 10,000 to 12,000 feet (*Galeotti*, 6258; *Liebmann*), Toluca (*Andrieux*, 38); Rancho del Guajolote (*Hartweg*, 413); Guatemala, Volcan de Fuego (*Godman & Salvin*). Hb. Kew.

20. **Cheilanthes tomentosa,** Link; Hook. et Bak. Syn. Fil. p. 140; Eaton, Ferns N. Am. i. p. 345, t. 45. figg. 1–5.
Cheilanthes tomentosa, var. *eatoni,* Davenport; Eaton in Proc. Am. Acad. xviii. p. 186.

Cheilanthes eatoni, Bak. in Hook. et Bak. Syn. Fil. p. 140; Eaton, Ferns N. Am. i. p. 349, t. 45. figg. 6–12.
Cheilanthes bradburii, Hook. Sp. Fil. ii. p. 97, t. 109 B.

North Carolina to Texas and Arizona.—North Mexico, Soledad, Coahuila (*Palmer*, 1396), Caracol Mountains (*Palmer*, 1391), Soledad, Guajuco, Nuevo Leon, and mountains east and south of Saltillo (*Palmer*, 1393, 1394, 1397, 1398: *eatoni*), San Luis Potosi (*Parry & Palmer*, 999½; *Schaffner*, 910: *eatoni*). Hb. Kew.

21. **Cheilanthes viscosa**, Kaulf.; Hook. Sp. Fil. ii. p. 104, t. 93 B; Hook. et Bak. Syn. Fil. p. 136; Eaton in Proc. Am. Acad. xviii. p. 186; Fourn. Mex. Pl. Enum. i. p. 123, excl. syn. Liebm.?
Cheilanthes tenuis, Presl, Reliq. Hænk. i. p. 65?

North Mexico, Sierra Madre (*Seemann*, 1944), San Luis Potosi (*Schaffner*, 926; *Parry & Palmer*, 990); South Mexico, between Talea and Hacienda de Gertrudes, Oaxaca (*Liebmann*), around Mexico (*Schmitz*), Pedregal (*Bourgeau*, 258); Guatemala, Motagua valley (*Godman & Salvin*); Nicaragua, Realejo (*Barclay*).—Venezuela. Hb. Kew.

Eaton (loc. sup. cit.) states that *Pellæa glauca*, J. Sm., in no way differs from this.

22. **Cheilanthes wrightii**, Hook. var.?, Eaton in Proc. Am. Acad. xviii. p. 185.
North Mexico, Soledad, Coahuila (*Palmer*, 1378). Hb. Kew.
Typical *C. wrightii* ranges from Texas to Arizona.

[*Myriopteris intermedia*, Fourn., and *Aleuritopteris schaffneri*, Fourn. in Bull. Soc. Bot. France, xxvii. p. 328, both collected by Schaffner in the State of San Luis Potosi, belong to *Cheilanthes* as limited here, and most probably to some of the foregoing species.]

17. LLAVEA.

Llavea, Lagasca; Hook. et Bak. Syn. Fil. p. 144, t. 8. fig. 28.

A monotype.

1. **Llavea cordifolia**, Lagasca; Hook. Sp. Fil. ii. p. 125, et Ic. Pl. tt. 387, 388; Hook. et Bak. Syn. Fil. p. 144; Fourn. Mex. Pl. Enum. i. p. 122; Eaton in Proc. Am. Acad. xviii. p. 187.
Ceratodactylis osmundoides, J. Sm. in Hook. et Bauer, Gen. Fil. t. 26; Fée, 5e Mém. Foug. p. 228.
Allosorus karwinskii, Kunze in Linnæa, xiii. p. 138, et Farrnkr. t. 4; Benth. Pl. Hartw. p. 54; Mart. et Gal. Foug. Mex. p. 47; Liebm. Mexicos Bregner, p. 69.
Botryogramme karwinskii, Fée, Gen. Fil. p. 166, t. 15.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); Guajuco, Nuevo Leon (*Palmer*, 1375); South Mexico, Barranca del Encarnacion, near Zimapan, region of Orizaba (*Bourgeau*, 2513), Oaxaca 5000 to 7500 feet (*Galeotti*, 6351), Vera Cruz to Orizaba (*Müller*), Zimapan (*Coulter*, 1684), Amatenango, Chiapas (*Linden*, 1522), Chiapas &c. (*Ghiesbreght*, 235), Sierra San Pedro Nolasco &c. (*Jurgensen*, 680). Hb. Kew.

18. PELLÆA.

Pellæa, Link; Hook. et Bak. Syn. Fil. p. 144, et ed. 2, p. 476, t. 30. fig. 30.

About fifty-five species, having a similar range to the species of *Cheilanthes*.

1. **Pellæa (Allosorus) alabamensis,** Bak. in Hook. et Bak. Syn. Fil. p. 148.

Cheilanthes alabamensis, Kunze; Hook. Sp. Fil. ii. p. 89, t. 103 B; Eaton in Proc. Am. Acad. xviii. p. 185; Hook. Exot. Ferns, t. 90.

ALABAMA and GEORGIA to TEXAS and ARIZONA.—NORTH MEXICO, Guajuco, Nuevo Leon and in the mountains east of Saltillo (*Palmer*). Hb. Kew.

2. **Pellæa (Allosorus) andromedæfolia,** Fée; Hook. Sp. Fil. ii. p. 149; Hook. et Bak. Syn. Fil. p. 150; Eaton, Ferns N. Am. i. p. 203, t. 27. fig. 1.

Platyloma andromedæfolium, J. Sm. in Hook. Lond. Journ. Bot. iv. p. 160.

Pteris andromedæfolia, Kaulf. Enum. Fil. p. 188; Hook. et Arn. Bot. Beech. Voy. p. 406.

Allosorus andromedæfolius, Kaulf.; Kunze in Linnæa, ix. p. 56.

CALIFORNIA; ARIZONA.—NORTH MEXICO, north-eastern Mexico (ex *Eaton*).—ANDES to CHILI, and in SOUTH AFRICA.

3. **Pellæa (Allosorus) angustifolia,** Bak. in Hook. et Bak. Syn. Fil. p. 150.

Cheilanthes angustifolia, H. B. K. Nov. Gen. et Sp. i. p. 21; Mett. Cheil. p. 44; Fourn. Mex. Pl. Enum. i. p. 122, et in Bull. Soc. Bot. France, xix. p. 258.

Allosorus angustifolius, Presl, Tent. p. 152; Liebm. Mexicos Bregner, p. 67; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 341.

Allosorus decompositus, Mart. et Gal. Foug. Mex. p. 48, t. 10. fig. 2.

Cheilanthes decomposita, Fée, 9e Mém. Foug. ex Fourn.

Cheilanthes venusta, var. *aurea*, Fée, 10e Mém. Foug. p. 20, ex Fourn.

Pellæa decomposita, Hook. Sp. Fil. ii. p. 151, t. 119 B.

Onychium angustifolium, Kunze, Farrnkr. ii. p. 11; Hook. Sp. Fil. ii. p. 123.

Pellæa cuneata, J. Sm. teste Hook.

Cheilanthes cuneata, Link, Hort. Berol. ii. p. 40; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 341.

NORTH MEXICO, Sierra Madre and Cerro de Pinal (*Seemann*, 1927, 1932, 1450); SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2774), Real del Monte (*Coulter*, 1687), Sierra San Pedro Nolasco &c. (*Jurgensen*, 669, 670), Chiapas &c. (*Ghiesbreght*, 242), Guadalupe (*Schmitz*), near Santa Fé (*Bourgeau*, 456); GUATEMALA, without locality (*Skinner*), Volcan de Fuego, Motagua valley, and Quezaltenango (*Godman & Salvin*); NICARAGUA, Omotepe (*Lévy*, 1136).—VENEZUELA. Hb. Kew.

4. **Pellæa (Allosorus) aspera,** Bak. in Hook. et Bak. Syn. Fil. p. 148; Eaton, Ferns N. Am. ii. p. 205, t. 74. figg. 1–4, et in Proc. Am. Acad. xviii. p. 187.

TEXAS.—NORTH MEXICO, near the Santa Rita Copper-mines, just within our boundary (*Wright*, 2127), Monclova, Coahuila (*Palmer*, 1422). Hb. Kew.

5. **Pellæa (Allosorus) atropurpurea,** Link; Hook. Sp. Fil. ii. p. 138; Hook

et Bak. Syn. Fil. p. 147; Eaton in Proc. Am. Acad. xviii. p. 187; Fourn. Mex. Pl. Enum. i. p. 119, cum var. *mucronata*.

Allosorus atropurpureus, Kunze teste Hook.

Canada and British Columbia southward; Texas.—North Mexico, Caracol Mountains and near Saltillo, Coahuila (*Palmer*, 1425); South Mexico, Chiapas &c. (*Ghiesbreght*, 216), Escamela (*Bourgeau*, 3068), Pueblo Nuevo (*Linden*), valley of Mexico (*Schaffner*). Hb. Kew.

[*P. geraniæfolia*, Fée, an exceedingly widely-dispersed species in warm countries, including the West Indies and South America, is recorded from Guatemala in Hooker and Baker's 'Synopsis Filicum;' but there is no specimen in the Kew Herbarium.]

6. **Pellæa (Platyloma) cordata,** J. Sm.; Hook. Sp. Fil. ii. p. 148; Hook. et Bak. Syn. Fil. p. 152; Fourn. Mex. Pl. Enum. i. p. 118.

Pellæa flexuosa, Link, Fil. Hort. Berol. p. 60; Fée, 8e Mém. Foug. p. 129; Eaton, Ferns N. Am. i. p. 207, t. 27.

Pteris cordata, Cav. Præl.; H. B. K. Nov. Gen. et Sp. i. p. 15; Presl, Reliq. Hænk. i. p. 57; Mart. et Gal. Foug. Mex. p. 54.

Allosorus cordatus, Presl; Kunze in Linnæa, xiii. p. 135.

Pellæa sagittata, Link, Fil. Hort. Berol. p. 60.

Allosorus sagittatus, Presl; Kunze, Farrnkr. t. 24.

Allosorus flexuosus, Kaulf.; Kunze, Farrnkr. t. 23.

Texas to California.—North Mexico, Sierra Madre (*Seemann*, 1940), Soledad and Monterey (*Palmer*), San Miguelito Mountains, San Luis Potosi (*Schaffner*, 958); South Mexico, Valley of Mexico (*Bourgeau*, 185, 251, 689, 1163), Real del Monte (*Coulter*, 1688), San Félipe (*Andrieux*, 41), Tacubaya and Chapultepec (*Schaffner*), Oaxaca 7000 feet (*Galeotti*, 6558), Chiapas &c. (*Ghiesbreght*, 204, 303), San Miguel and La Galera (*Liebmann*), region of Orizaba (*Bourgeau*, 3067); Guatemala, Volcan de Fuego and San Gerónimo (*Godman & Salvin*).—Southward to Peru. Hb. Kew.

The greater part of the specimens enumerated belong to the form called *flexuosa*, which Fournier retains as a distinct species; and Eaton (Proc. Am. Acad. xviii. p. 187) says that in well-developed fronds the zigzag habit is very conspicuous, and it is, perhaps, as well to keep the two (*i. e. P. cordata* and *P. flexuosa*) apart.

7. **Pellæa fournieri,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 476.

Pellæa flavescens, Fourn. Mex. Pl. Enum. i. p. 119, non Fée.

South Mexico, Cuernavaca (*Bourgeau*). Hb. Kew.

8. **Pellæa (Allosorus) glauca,** J. Sm.; Hook. et Bak. Syn. Fil. p. 151.

Cheilanthes glauca, Mett. Cheil. p. 31.

Allosorus hirsutus, Presl, Reliq. Hænk. i. p. 59, t. 10.

Pellæa hirsuta, Hook. Sp. Fil. ii. p. 152.

Pteris glauca, Cav. Præl. p. 269; Nees in Linnæa, xix. p. 685; Liebm. Mexicos Bregner, p. 72.

Mexico, without locality (*Aschenborn*).—Chili.

There are no Mexican specimens of this species at Kew, and Liebmann cites it among

the doubtful ones. It is probable that the name was incorrectly applied to Aschenborn's plant. Fournier refers *P. glauca* to *P. marginata.*

9. **Pellæa (Allosorus) intramarginalis,** J. Sm.; Hook. et Bak. Syn. Fil. p. 148; Bak. in Journ. Bot. 1884, p. 362.

Pteris intramarginalis, Kaulf.; Ch. et Schl. in Linnæa, v. p. 613; Kunze, Anal. Pterid. p. 21, t. 17; Fourn. Mex. Pl. Enum. i. p. 115; Mart. et Gal. Foug. Mex. p. 53.

Pteris fallax, Mart. et Gal. loc. cit. t. 14. fig. 2.

Allosorus inframarginalis, Link, Hort. Berol. ii. p. 34.

Cheilanthes intramarginalis, Hook. Sp. Fil. ii. p. 112.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Vera Cruz to Orizaba (*Müller; Bourgeau*, 2792), Mirador (*Liebmann; Linden*, 40), around Mexico (*Schmitz*), Chinantla, Puebla 7000 feet (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 239, 440; *Linden*, 1531); Guatemala, Volcan de Agua (*Godman & Salvin*); Costa Rica (*Harrison*).—Ecuador; Argentina. Hb. Kew.

10. **Pellæa (Allosorus) marginata,** Bak. in Hook. et Bak. Syn. Fil. p. 151; Eaton in Proc. Am. Acad. xviii. p. 187.

Cheilanthes marginata, H. B. K. Nov. Gen. et Sp. i. p. 22, et vii. t. 669; Hook. Sp. Fil. ii. p. 105; Fourn. Mex. Pl. Enum. i. p. 122, cum varietatibus; Eaton in Proc. Am. Acad. xviii. p. 187.

Cheilanthes chærophylla, Fée, *C. pyramidalis,* Fée, *C. ciliata,* Fée, et *C. chærophylloides,* Fée, teste Fourn.

Allosorus ciliatus, Presl, Reliq. i. p. 59; Liebm. Mexicos Bregner, p. 66.

Allosorus ciliatus et *A. chærophyllus,* Mart. et Gal. Foug. Mex. pp. 47 et 48, t. 11.

Arizona.—North Mexico, in the San Miguelito and San Rafael Mountains, San Luis Potosi (*Schaffner*, 924; *Parry & Palmer*, 982); South Mexico, Valley of Mexico (*Bourgeau*, 458; *Schmitz*), Chinantla, Puebla 7000 feet (*Liebmann*), region of Orizaba (*Bourgeau*, 2775), Toluca (*Schaffner*), Oaxaca 4000 feet (*Galeotti*, 6544), Jalapa and Real del Monte (*Coulter*, 1676, 1677), Chiapas (*Ghiesbreght*, 233); Guatemala, without locality (*Fraser; Skinner*), Volcan de Fuego (*Godman & Salvin*). Hb. Kew.

11. **Pellæa pallida,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 478.

Mexico, without locality (*Glennie*). Hb. Kew.

12. **Pellæa (Allosorus) pulchella,** Fée; Hook. Sp. Fil. ii. p. 150; Hook. et Bak. Syn. Fil. p. 150; Fourn. Mex. Pl. Enum. i. p. 119; Eaton, Ferns N. Am. i. p. 81, t. 11. fig. 2, et in Proc. Am. Acad. xviii. p. 187.

Allosorus pulchellus, Mart. et Gal. Foug. Mex. p. 47, t. 10. fig. 1.

Allosorus formosus, Liebm. Mexicos Bregner, p. 68.

Texas; New Mexico.—North Mexico, Soledad and Lerios, Coahuila (*Palmer*, 1423, 1424), San Luis Potosi (*Virlet d'Aoust*); South Mexico, Tepitongo, Oaxaca (*Liebmann*), region of Orizaba (*Bourgeau*, 2894), Chiapas &c. (*Ghiesbreght; Linden*, 1546); San Felipe (*Andrieux*, 42). Hb. Kew.

13. **Pellæa rigida,** Hook. Sp. Fil. ii. p. 144; Hook. et Bak. Syn. Fil. p. 147; Fourn. Mex. Pl. Enum. i. p. 119; Eaton in Proc. Am. Acad. xviii. p. 187.

Pteris rigida, Swartz, Syn. Fil. pp. 104 et 299.
Allosorus rigidus, Kunze in Linnæa, ix. p. 55, et xiii. p. 137.
Cheilopecton rigidum, Fée, 7e Mém. Foug. p. 33, t. 20. fig. 3.
Pteris cartilaginea, Presl, Reliq. Hænk. i. p. 57, t. 9. fig. 3.
Pteris acutangula, Nees in Linnæa, xix. p. 684.
Cheilanthes rigida, Moore; Mett. Cheil. p. 48.

North Mexico ?, San Luis Potosi to Tampico (*Parry & Palmer*, 1156); South Mexico, region of Orizaba (*Bourgeau*, 2771), Trapiche de la Concepcion (*Liebmann*), Chiapas &c. (*Ghiesbreght*); Guatemala, Motagua valley (*Godman & Salvin*).—Peru. Hb. Kew.

14. **Pellæa seemanni,** Hook. Sp. Fil. ii. p. 141, t. 117 B; Hook. et Bak. Syn. Fil. p. 145; Eaton in Proc. Am. Acad. xviii. p. 187; Fourn. Mex. Pl. Enum. i. p. 119.

North Mexico, Morales Mountains, San Luis Potosi (*Schaffner*, 923; *Parry & Palmer*, 979), Mazatlan (*Seemann*, 1447). Hb. Kew.

15. **Pellæa skinneri,** Hook. Sp. Fil. ii. p. 141, t. 118 B; Hook. et Bak. Syn. Fil. p. 147.

Guatemala, without locality (*Skinner*), Motagua valley (*Godman & Salvin*). Hb. Kew.

16. **Pellæa (Allosorus) ternifolia,** Link, Hort. Berol. p. 59; Hook. Sp. Fil. ii. p. 142, et Fil. Exot. t. 15; Hook. et Bak. Syn. Fil. p. 148; Fourn. Mex. Pl. Enum. i. p. 118; Eaton, Ferns N. Am. ii. p. 59, t. 54. figg. 1–3, et in Proc. Am. Acad. xviii. p. 187.

Pteris ternifolia, Cav.; Hook. et Grev. Ic. Fil. t. 126.
Pteris triphylla, Bert. non Mart. et Gal. ex Fourn.
Pellæa lanuginosa, Fée, 8e Mém. Foug. ex Fourn.

Texas; New Mexico.—North Mexico, Escobrillos Mountains, San Luis Potosi (*Schaffner*, 924; *Parry & Palmer*, 982); South Mexico, San Angel (*Schaffner*), near Tacubaya (*Bourgeau*, 261), Mitla, Oaxaca (*Andrieux*, 100); Guatemala, Quiche (*Godman & Salvin*).—Southward to Chili and in the Sandwich Islands. Hb. Kew.

19. PTERIS.

Pteris, Linn.; Hook. et Bak. Syn. Fil. p. 153, et ed. 2, p. 487, t. 3. fig. 31.

There are about 100 species of this cosmopolitan genus; only one, however, occurs in the Arctic Regions, and the greatest concentration of species is in Tropical America.

1. **Pteris (Litobrochia) aculeata,** Swartz; Hook. Sp. Fil. ii. p. 224; Hook. et Bak. Syn. Fil. p. 171; Bak. in Journ. Bot. 1884, p. 362.

Pteris apicalis, Liebm., et *P. protea,* Liebm. Mexicos Bregner, pp. 76 et 77; Fourn. in Bull. Soc. Bot. France, xix. p. 258.
Litobrochia setifera, Fée, Gen. Fil. p. 138, et 9e Mém. Foug.
Pteris orizabæ, Mart. et Gal. Foug. Mex. p. 53, t. 13, non Kl. ex Fourn.
Litobrochia orizabæ, Fée, et *L. hemipteris,* Fée ex Fourn.
Pteris (*Litobrochia*) *propinqua,* Agardh; Hook. Sp. Fil. ii. p. 223.

South Mexico, Mirador (*Liebmann*), Jalapa (*Linden*, 11), Orizaba (*Bourgeau*, 2611: *orizabæ*), Itzhuatlancillo (*Bourgeau*, 2610: *setifera*), around Mexico (*Schmitz*), Teapa (*Linden*, 1509), Chiapas &c. (*Ghiesbreght*, 376); Guatemala, Chilasco and Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*, 1472: *apicalis*); Costa Rica (*Harrison*).—West Indies to Brazil and Peru. Hb. Kew.

The limits of this species, *P. podophylla*, and *P. kunzeana* are obscure, and the synonymy of the three species is confused.

2. **Pteris aquilina,** Linn.; Hook. Sp. Fil. ii. p. 196; Hook. et Bak. Syn. Fil. p. 162; Eaton, Ferns N. Am. i. p. 263, t. 35, et in Proc. Am. Acad. xviii. p. 187; Fée, 8e Mém. Foug. p. 114 (var. *mexicana*); Kunze in Linnæa, xiii. p. 142 (var. *pubescens*); Kuhn, Beitr. p. 10 (var. *lanuginosa*).

Pteris caudata, Linn.; Mart. et Gal. Foug. Mex. p. 54; Liebm. Mexicos Bregner, p. 74; Fourn. Mex. Pl. Enum. i. p. 116.

Pteris lanuginosa, Bory in Willd. Sp. Pl. v. p. 403.

Pteris feei, Schaffner in Fée, 8e Mém. Foug. p. 73; Fourn. Mex. Pl. Enum. i. p. 116.

Pteris decomposita, Gaud.; Fourn. in Bull. Soc. Bot. France, xix. p. 258, non Baker.

A cosmopolitan fern, extending from Arctic Europe to New Zealand, and ranging through all the continents and Polynesia. Common in Mexico and Central America, the hairy variety *lanuginosa* predominating. Hb. Kew.

3. **Pteris (Campteria) biaurita,** Linn.; Hook. Sp. Fil. ii. p. 204; Hook. et Bak. Syn. Fil. p. 164; Fourn. Mex. Pl. Enum. i. p. 115, et in Bull. Soc. Bot. France, xxii. p. 171.

Pteris plumieri, Ch. et Schl. in Linnæa, v. p. 613.

Pteris edentula, Kunze, teste Fourn. loc. cit.

Litobrochia galeottii, Fée, 8e Mém. Foug. p. 75.

Pteris nemoralis, Willd.; Liebm. Mexicos Bregner, p. 74?

A very widely dispersed fern in the tropical zone, and recorded by Fournier from many localities in Mexico and Central America; but there are no specimens bearing this name in the Kew Herbarium from within our limits, though *Litobrochia galeottii* is cited in the 'Synopsis Filicum' as a probable synonym of *P. biaurita.* It appears, however, that Fournier's idea of this species differed from Hooker and Baker's, as several of the collectors' numbers referred by him to *P. biaurita* are named *P. quadriaurita* in the Kew Herbarium, and *P. edentula*, Kunze, is indicated in the 'Synopsis' (p. 159, sub *P. pungenti*) as normal *P. quadriaurita.*

4. **Pteris cretica,** Linn.; Hook. Sp. Fil. ii. p. 159; Hook. et Bak. Syn. Fil. p. 154; Fourn. Mex. Pl. Enum. i. p. 114; Liebm. Mexicos Bregner, p. 73; Eaton, Ferns N. Am. ii. p. 141, t. 64.

Pteris serrulata, Mart. et Gal. Foug. Mex. p. 52, non Linn. f. ex Fourn.

Pteris triphylla, Mart. et Gal. loc. cit. p. 51, teste Hook.

Pteris trifolia, Fée, 8e Mém. Foug. p. 114.

Florida.—South Mexico, Jalapa (*Coulter*, 1692), Pedregal &c., in the valley of

Mexico (*Bourgeau*, 262, 2340), Mirador, and Chinantla, Puebla 7000 feet (*Liebmann*), Borrego (*Bourgeau*, 2776), Yavezia, cordillera of Oaxaca 6700 to 7500 feet (*Galeotti*, 6377), Chiapas &c. (*Ghiesbreght*, 202, 1545); GUATEMALA, without locality (*Skinner*), Coban (*Godman & Salvin*).—SOUTH EUROPE; WEST ASIA; AFRICA; POLYNESIA. Hb. Kew.

5. **Pteris (Litobrochia) elata,** Agardh; Hook. Sp. Fil. ii. p. 223; Hook. et Bak. Syn. Fil. p. 173.

GUATEMALA, Escuintla and Choctum (*Godman & Salvin*); PANAMA (*Cuming*, 1267).—Southward to ECUADOR. Hb. Kew.

6. **Pteris (Heterophlebium) grandifolia,** Linn.; Hook. Sp. Fil. ii. p. 201, t. 113 B; Hook. et Bak. Syn. Fil. p. 164; Mart. et Gal. Foug. Mex. p. 52; Liebm. Mexicos Bregner, p. 76; Fourn. Mex. Pl. Enum. i. p. 117.

SOUTH MEXICO, Tabasco (*Linden*), Papantla and Jicaltepec (*Liebmann*), Chiapas &c. (*Ghiesbreght*), Oaxaca (*Galeotti*, 6376).—WEST INDIES to PERU. Hb. Kew.

Galeotti's number 6376 is referred hither by Fournier and to *P. pulchra* in the Kew Herbarium, but both species may have been distributed under this number.

7. **Pteris (Litobrochia) hænkeana,** Presl, Reliq. Hænk. i. p. 55; Hook. Sp. Fil. ii. p. 213; Hook. et Bak. Syn. Fil. p. 169.

GUATEMALA, without locality (*Godman & Salvin*, 201).—COLOMBIA to PERU. Hb. Kew.

8. **Pteris (Litobrochia) incisa,** Thunb.; Hook. Sp. Fil. ii. p. 230; Hook. et Bak. Syn. Fil. p. 172.

Pteris vespertilionis, Labill. Nov. Holl. p. 96, t. 245.

NICARAGUA, without locality (*Tate*).—Very widely spread in TROPICAL COUNTRIES, and extending northward to FORMOSA, and southward to CHILI, JUAN FERNANDEZ, CAPE OF GOOD HOPE, and NEW ZEALAND. Hb. Kew.

9. **Pteris (Litobrochia) kunzeana,** Agardh; Hook. Sp. Fil. ii. p. 221, t. 139; Hook. et Bak. Syn. Fil. p. 173; Fourn. Mex. Pl. Enum. i. p. 117.

Pteris arborescens, Mart. et Gal. Foug. Mex. p. 54; Liebm. Mexicos Bregner, p. 79.

Pteris schiedeana, Ettingsh. Farrnkr. der Jetztwelt, p. 99, t. 66, ex Fourn.

Litobrochia grandis, Fée, 8e Mém. Foug. p. 75.

Litobrochia arborescens, Fée, Gen. Fil. p. 135.

SOUTH MEXICO, valley of Cordova and Chiquihite (*Bourgeau*, 2018, 2145).—WEST INDIES to PERU. Hb. Kew.

Fournier cites several other localities within our limits, and reduces *P. protea*, Liebm., to *P. kunzeana*. See remarks under *P. aculeata*.

10. **Pteris laciniata,** Willd.; Hook. Sp. Fil. ii. p. 176, t. 132 B; Hook. et Bak. Syn. Fil. p. 160; Fourn. Mex. Pl. Enum. i. p. 116, cum var. β.

Lonchitis hirsuta, Linn., et *L. ghiesbreghtii,* Linden, teste Hook. et Bak.

SOUTH MEXICO, near Mirador (*Liebmann*), around Mexico (*Schmitz*), valley of Cordova

(*Bourgeau*, 2015), Itzhuatlancillo (*Bourgeau*, 2353), Chiapas &c. (*Ghiesbreght*, 357); GUATEMALA, mountain forests, Vera Paz (*Salvin*).—WEST INDIES to PERU. Hb. Kew.

[*Pteris lata*, Link, and *P. rostrata*, Fée, are enumerated by Fournier as Mexican. Mr. Baker refers them to *P. deflexa* and *P. coriacea*, neither of which is represented in the Kew Herbarium from within our limits, though very common from South America, northward to the boundary of the State of Panama.]

11. **Pteris longifolia,** Liebm.; Hook. Sp. Fil. ii. p. 157; Hook. et Bak. Syn. Fil. p. 153; Fourn. Mex. Pl. Enum. i. p. 114; Eaton, Ferns N. Am. ii. p. 235, t. 78. figg. 1–4.

Pteris æqualis, Presl, Reliq. Hænk. i. p. 54.

FLORIDA.—SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2358; *Müller*, 723), Escamela (*Hahn*).—Very widely dispersed in TROPICAL and TEMPERATE REGIONS of both hemispheres. Hb. Kew.

12. **Pteris muricella,** Fée, 8e Mém. Foug. p. 73; Hook. Sp. Fil. ii. p. 194; Fourn. Mex. Pl. Enum. i. p. 115.

SOUTH MEXICO, Cordova, Huatusco (*Schaffner*).

13. **Pteris (Doryopteris) palmata,** Willd.; Hook. Gard. Ferns, t. 22; Hook. et Bak. Syn. Fil. p. 166; Fourn. Mex. Pl. Enum. i. p. 117.

Petris pedata, Hook. Sp. Fil. ii. p. 208, in part ex Hook. et Bak.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2153), San Felipe (*Andrieux*, 45), Orizaba (*Schaffner*).—WEST INDIES to COLOMBIA, PERU, and RIO JANEIRO. Hb. Kew.

14. **Pteris paucinervata,** Fée, 8e Mém. Foug. p. 73; Hook. Sp. Fil. ii. p. 194; Hook. et Bak. Syn. Fil. p. 157; Fourn. Mex. Pl. Enum. i. p. 116.

Pteris swartziana, Liebm. Mexicos Bregner, p. 74, non Agardh. ex Fourn.

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 380), around Mexico (*Schmitz*), San Bartolomeo, Vera Cruz 4500 feet (*Liebmann*), Barranca de San Martin near Mirador (*Schaffner*), Orizaba (*Müller*, 389 bis). Hb. Kew.

15. **Pteris (Litobrochia) podophylla,** Swartz; Hook. Sp. Fil. ii. p. 227, et Gard. Ferns, t. 55; Hook. et Bak. Syn. Fil. p. 172.

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 373; *Linden*, 1539), Mirador (*Liebmann*); GUATEMALA, Chilasco (*Godman & Salvin*).—WEST INDIES to ECUADOR. Hb. Kew.

16. **Pteris (Litobrochia) pulchra,** Ch. et Schl. in Linnæa, v. p. 614; Hook. Sp. Fil. ii. p. 213; Hook. et Bak. Syn. Fil. p. 169.

Litobrochia mexicana, Fée, Gen. Fil. p. 136; Fourn. Mex. Pl. Enum. i. p. 117.

Pteris grandifolia, Mart. et Gal. Foug. Mex. p. 52, non Linn.

SOUTH MEXICO, Oaxaca 5000 feet (*Galeotti*, 6376), Chiapas (*Linden*, 1521), Santa Maria, Tlapacoya and San Pedro, Tepinapa (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 715, 871). Hb. Kew.

Fournier retains *Litobrochia mexicana* as a distinct species, to which he refers *Pteris grandifolia*, Mart. et Gal.; and *P. pulchra*, Ch. et Schl., he reduces to *P. podophylla*.

17. **Pteris pungens,** Willd.; Hook. Sp. Fil. ii. p. 182; Hook. et Bak. Syn. Fil. p. 159; Fourn. Mex. Pl. Enum. i. p. 115, et in Bull. Soc. Bot. France, xix. p. 258.

South Mexico, San Cristobal (*Botteri*, 1422); Nicaragua, Chontales (*Lévy*, 493 bis).—West Indies.

18. **Pteris quadriaurita,** Retz.; Hook. Sp. Fil. ii. p. 179, t. 134 B; Hook. et Bak. Syn. Fil. p. 158.

South Mexico, valley of Cordova (*Bourgeau*, 1429), cordillera of Vera Cruz at 3000 feet (*Galeotti*, 6291), Chiapas &c. (*Ghiesbreght*, 396), Tlapacoya (*Liebmann*); Guatemala, Coban, Vera Paz (*Salvin*), Escuintla (*Skinner*), Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*, 493; *Tate*, 15); Panama, Coiba and Boquete (*Seemann*, 1119).—All round the world in Tropical and Subtropical Regions. Hb. Kew.

Fournier does not include this species, but several of the collectors' numbers cited above are given by him as being *P. biaurita*. See remarks under that species, p. 622.

20. CERATOPTERIS.

Ceratopteris, Brongn.; Hook. et Bak. Syn. Fil. p. 174, t. 3. fig. 32.

An aquatic monotype.

1. **Ceratopteris thalictroides,** Brongn.; Hook. Sp. Fil. ii. p. 235, et Gen. Fil. t. 12; Hook. et Bak. Syn. Fil. p. 174; Eaton, Ferns N. Am. ii. p. 255, t. 80. figg. 10–14. *Parkeria pteroides,* Hook. et Grev. Ic. Fil. t. 97; Liebm. Mexicos Bregner, p. 138.

Florida.—South Mexico, Tehuantepec (*Liebmann*).—West Indies to Brazil, and in Tropical Asia, Africa, and Australia. Hb. Kew.

Though widely diffused, this fern appears to be rare in Mexico and Central America, as there is only one specimen thence in the Kew Herbarium; and Fournier states that he had seen none from Mexico.

21. LOMARIA.

Lomaria, Willd.; Hook. et Bak. Syn. Fil. p. 174, et ed. 2, p. 481, t. 4. fig. 33.

Forty-five species are described in the 'Synopsis Filicum,' and the majority of them are concentrated in the south temperate zone, but the genus is scattered nearly all over the world.

1. **Lomaria attenuata,** Willd.; Hook. Sp. Fil. iii. p. 6; Hook. et Bak. Syn. Fil. p. 176.

South Mexico, Chiapas &c. (*Ghiesbreght*, 385); Guatemala, Coban (*Godman & Salvin*).—West Indies to Brazil and Juan Fernandez; also in Polynesia, the Mascarene Islands, and Fernando Po. Hb. Kew.

2. **Lomaria blechnoides,** Bory ex Fée in Fourn. Mex. Pl. Enum. i. p. 115; Hook. Sp. Fil. iii. p. 12; Hook. et Bak. Syn. Fil. p. 177.

Lomaria alpina, Fée, 9e Mém. Foug. teste Fourn. loc. cit.

South Mexico, Cerro de la Cruz, valley of Orizaba (*Schaffner*).—Chili.

Inserted on the authority of Fournier.

3. **Lomaria (Plagiogyria) costaricensis,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 482.

Costa Rica, without locality (*Wendland*).

There appears to be no specimen of this in the Kew Herbarium.

4. **Lomaria ensiformis,** Liebm. Mexicos Bregner, p. 82; Fourn. Mex. Pl. Enum. i. p. 113.

South Mexico, Teotalcingo, Chinantla, Oaxaca 4000 to 5000 feet (*Liebmann*).

We find no mention of this name in Hooker and Baker's 'Synopsis,' but in Hooker's 'Species Filicum' it is cited doubtingly as a form of *procera.*

5. **Lomaria ghiesbreghtii,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 481.

South Mexico, Chiapas &c. (*Ghiesbreght,* 207). Hb. Kew.

6. **Lomaria onocleoides,** Spreng.; Hook. Sp. Fil. iii. p. 9, t. 146; Hook. et Bak. Syn. Fil. p. 178; Fourn. Mex. Pl. Enum. i. p. 113, et in Bull. Soc. Bot. France, xix. p. 258.

Lomaria fragilis, Liebm. Mexicos Bregner, p. 80.
Lomaria mexicana, Fée, 8e Mém. Foug. p. 70, teste Fourn.
Blechnum onocleoides, Swartz; Ch. et Schl. in Linnæa, v. p. 613.
Lomaria binervata, Desv. in Berl. Mag. v. p. 315, ex Fourn.

South Mexico, Huatusco, Mirador (*Schaffner; Müller,* 438; *Galeotti,* 6465), Huitamalco (*Liebmann*); Nicaragua, Chontales (*Lévy,* 1464).—West Indies and Ecuador. Hb. Kew.

7. **Lomaria procera,** Spreng.; Hook. Sp. Fil. iii. p. 23; Hook. et Bak. Syn. Fil. p. 179; Hook. Ic. Pl. t. 427, et Gard. Ferns, t. 53.

Lomaria brasiliensis, Raddi, Fil. Bras. p. 50, t. 72 et 72 bis; Fourn. Mex. Pl. Enum. i. p. 113.
Lomaria varians, Fourn., et *L. stolonifera,* Fourn.? loc. cit.
Lomaria spectabilis, Liebm., *L. falciformis,* Liebm., et *L. deflexa,* Liebm. Mexicos Bregner, pp. 82–84.
Lomaria longifolia, Mart. et Gal. Foug. Mex. p. 49, non Kaulf. nec Spreng. ex Fourn.
Lomaria striata, Willd.; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 235.
Lomaria schiedeana, Presl, Tent. Pterid. p. 143.
Blechnum (*Lomaria*), sp. an nova? Ch. et Schl. in Linnæa, v. p. 613.
Lomaria acrodonta, Fée, 8e Mém. Foug. p. 70, ex Fourn.
Lomaria danæacea, Kunze in Linnæa, xviii. p. 326; Liebm. Mexicos Bregner, p. 82.
Lomaria ornifolia, Presl, Reliq. Hænk. i. p. 51, et Kunze in Linnæa, ix. p. 59.
Lomaria juglandifolia, Presl, loc. cit. p. 52?

South Mexico, cordillera of Vera Cruz 4000 feet (*Galeotti,* 6406), Orizaba (*Bourgeau,*

2790), Totutla (*Linden*, 66; *Liebmann*; *Schaffner*), valley of Cordova (*Bourgeau*, 1826: *varians*), Chiapas &c. (*Ghiesbreght*, 389, 451); Guatemala (*Skinner*; *Godman & Salvin*). —West Indies to Chili; Malaya; Polynesia; Australia; New Zealand; South Africa. Hb. Kew.

8. **Lomaria (Plagiogyria) semicordata,** Bak. in Hook. et Bak. Syn. Fil. p. 182.

Lomaria (*Plagiogyria*) *biserrata,* Mert. et Lind.; Hook. Sp. Fil. iii. p. 19.
Plagiogyria biserrata, Mett. Farrn-G. ii. p. 8, t. 4, et in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 344; Fourn. Mex. Pl. Enum. i. p. 133.
Plagiogyria æquidentata, Fourn. loc. cit.?
Lomaria pectinata, Liebm. Mexicos Bregner, p. 81.
Lomaria arguta, Fée, 8e Mém. Foug. p. 70, ex Fourn.
Lomaridium semicordatum, Presl, Epim. p. 155.

South Mexico, Cerro de Sempoaltepec, Oaxaca 6000 feet (*Liebmann*), Cerro del Agua (*Schaffner*), valley of Orizaba (*Müller*, 1488; *Botteri*, 1421), Chiapas &c. (*Ghiesbreght*, 395).—Jamaica to Peru and South Brazil. Hb. Kew.

Tribe VII. BLECHNEÆ.

There are only four genera of this tribe, the two following and *Doodia*, chiefly Australian, but extending to New Zealand, Polynesia, and Ceylon, and *Sadleria*, a Sandwich-Island genus of two species, one of which has also been found in Sumatra.

22. BLECHNUM.

Blechnum, Linn.; Hook. et Bak. Syn. Fil. p. 183, et ed. 2, p. 482, t. 4. fig. 34.

Nineteen species are admitted in the 'Synopsis;' they are widely spread in tropical and south temperate regions.

1. **Blechnum asplenioides,** Swartz; Hook. Sp. Fil. iii. p. 45; Hook. et Bak. Syn. Fil. p. 183.

Panama, without locality (*Seemann*).—Colombia to Peru and Brazil. Hb. Kew.

2. **Blechnum lanceola,** Swartz; Hook. Sp. Fil. iii. p. 47, et Ic. Pl. t. 970; Hook. et Bak. Syn. Fil. p. 183.

Panama, Boquete, Veraguas (*Seemann*, 1556).—Colombia to Peru and Brazil. Hb. Kew.

3. **Blechnum longifolium,** H. B. K. Nov. Gen. et Sp. i. p. 13; Hook. Sp. Fil. iii. p. 49, t. 154; Hook. et Bak. Syn. Fil. p. 185, cum *β. fraxineus.*

Blechnum intermedium, Link, Hort. Berol. ii. p. 75; Liebm. Mexicos Bregner, p. 86.
Blechnum gracile, Kaulf. Enum. Fil. p. 158; Fourn. Mex. Pl. Enum. i. p. 112, et in Bull. Soc. Bot. France, xix. p. 258; Bak. in Journ. Bot. 1884, p. 362.
Blechnum longifolium, var. *gracile,* Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 306.

South Mexico, cordillera of Vera Cruz 2000 feet (*Galeotti*, 6302), valley of Cordova

(*Bourgeau*, 1433), Mirador (*Linden*, 72); Guatemala, Mazatenango (*Bernoulli*, 551); Salvador, Sonsonate (*Skinner*); Nicaragua, Chontales (*Tate*, 129; *Lévy*, 798); Costa Rica (*Harrison: gracile*); Panama, Empire Station (*S. Hayes*, 261).—West Indies to Peru and Brazil. Hb. Kew.

4. **Blechnum occidentale,** Linn.; Hook. Sp. Fil. iii. p. 50; Hook. et Bak. Syn. Fil. p. 185; Fourn. Mex. Pl. Enum. i. p. 111 (cum varietatibus, β. *intermedium*, γ. *solutum*, et δ. *minus*), et in Bull. Soc. Bot. France, xix. p. 258, et xxii. p. 171; Eaton in Proc. Am. Acad. xviii. p. 188; Mart. et Gal. Foug. Mex. p. 50; Liebm. Mexicos Bregner, p. 86; Bak. in Journ. Bot. 1884, p. 362.

Blechnum caudatum, Cav. Præl. p. 262; Kunze in Linnæa, ix. p. 61; Mart. et Gal. loc. cit.
Blechnum meridionale, Presl, Del. Prag. i. p. 186, ex Fourn. Mex. Pl. Enum. i. p. 112.
Blechnum triangulare, Link, Sp. Fil. p. 78; Lowe, Ferns, ix. t. 35.
Blechnum aduncum, Liebm. Mexicos Bregner, p. 85.
Lomaria campylotis, Kunze in Linnæa, xvii. p. 567, et xviii. p. 326; Liebm. loc. cit. p. 81.
Blechnum glandulosum, Link, Sp. Fil. p. 78; Kunze in Linnæa, xiii. p. 140; Liebm. loc. cit. p. 86.
Blechnum ciliatum, Mart. et Gal. Foug. Mex. p. 50, non Presl ex Fourn.
Blechnum galeotti, Thos. Moore, Ind. Fil. ii. p. 196.

North Mexico, Sierra Madre (*Rascon*), mountains around San Luis Potosi (*Schaffner*, 952); South Mexico, valley of Cordova (*Bourgeau*, 1830), Mirador (*Linden*, 23), cordillera of Vera Cruz (*Galeotti*, 6397: α. *majus*, 6285: δ. *minus*), Chiapas (*Ghiesbreght*, 277); Guatemala, without locality (*Skinner*), Dueñas 4300 feet (*Salvin*), Mazatenango (*Bernoulli*, 456); Nicaragua, Chontales (*Tate*, 20; *Lévy*, 495), neighbourhood of Granada (*Lévy*, 407); Costa Rica (*Harrison*); Panama (*Seemann*, 18), Paraiso (*S. Hayes*, 99).—West Indies to Chili and South Brazil. Hb. Kew.

5. **Blechnum serrulatum,** Rich.; Hook. Sp. Fil. iii. p. 54; Hook. et Bak. Syn. Fil. p. 186; Eaton, Ferns N. Am. i. p. 141, t. 19.

Florida.—Panama, Chagres (*Fendler*, 399).—West Indies; Guiana; Brazil; Australia; Malay Archipelago. Hb. Kew.

6. **Blechnum unilaterale,** Willd.; Hook. et Bak. Syn. Fil. p. 184; Fourn. Mex. Pl. Enum. i. p. 112; Bak. in Journ. Bot. 1884, p. 362.

Blechnum polypodioides, Raddi, Fil. Bras. p. 53, t. 60; Hook. Sp. Fil. iii. p. 45; Mart. et Gal. Foug. Mex. p. 50; Liebm. Mexicos Bregner, p. 87.
Blechnum scabrum, Liebm. loc. cit. p. 84.
Blechnum angustifrons, Fée, 7e Mém. Foug. p. 25, t. 9. fig. 2, ex Fourn.

South Mexico, Mirador and Teotalcingo (*Liebmann*), Jalapa (*Schiede*), Llano Verde in the cordillera of Oaxaca (*Galeotti*, 6383); Costa Rica (*Harrison*).—West Indies to Peru and South Brazil. Hb. Kew.

23. WOODWARDIA.

Woodwardia, Smith; Hook. et Bak. Syn. Fil. p. 188.

Six species, spread all round the northern hemisphere, chiefly in the temperate zone.

1. **Woodwardia radicans,** Smith; Hook. Sp. Fil. iii. p. 66; Hook. et Bak. Syn. Fil. p. 188; Fourn. Mex. Pl. Enum. i. p. 111; Liebm. Mexicos Bregner, p. 87; Eaton, Ferns N. Am. ii. p. 117, t. 61.

Woodwardia spinulosa, Mart. et Gal. Foug. Mex. p. 64.

Woodwardia radicans, β. mexicana, Fée, Gen. Fil. p. 207.

California.—North Mexico, Sierra Madre (*Seemann*, 1929), San Luis Potosi (*Virlet d'Aoust*); South Mexico, Huatusco (*Liebmann*), Popocatepetl 7500 feet (*Schaffner*), Chiapas &c. (*Ghiesbreght*, 211; *Linden*, 1527), Misantla (*Hahn*); Guatemala, without locality (*Skinner*), Chilasco (*Godman & Salvin*).—Madeira; Canaries; South Europe; Himalayas; Sumatra; Java; Japan. Hb. Kew.

Tribe VIII. ASPLENIEÆ.

This Tribe consists of the genus *Asplenium*, and the two distinct monotypic genera *Allantodia* and *Actiniopteris*, both confined to the Old World and Polynesia.

24. ASPLENIUM.

Asplenium, Linn.; Hook. et Bak. Syn. Fil. p. 190, et ed. 2, p. 482, t. 4. fig. 38.

As constituted in Hooker and Baker's 'Synopsis Filicum,' this genus comprises 330 species, which are spread over the whole area of the Order.

1. **Asplenium abscissum,** Willd. ex Hook. et Bak. Syn. Fil. p. 203; Fourn. in Bull. Soc. Bot. France, xix. p. 257.

Asplenium firmum, Kunze; Hook. Sp. Fil. iii. p. 134, t. 174; Eaton, Ferns N. Am. ii. p. 259, t. 80. figg. 15–17.

Asplenium salicifolium, Fourn. Mex. Pl. Enum. i. p. 106, cum var. *β. minus.*

Asplenium polymorphum, Mart. et Gal. Foug. Mex. p. 56, t. 15. fig. 2; Liebm. Mexicos Bregner, p. 94.

Florida.—South Mexico, Mirador (*Liebmann*), Itzhuatlancillo (*Bourgeau*, 2347), valley of Cordova (*Bourgeau*, 2020), cordillera of Vera Cruz at 3000 feet (*Galeotti*, 6295); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Cuba to Peru and South Brazil. Hb. Kew.

2. **Asplenium (Athyrium) achilleæfolium,** Liebm. Mexicos Bregner, p. 97; Hook. Sp. Fil. iii. p. 230; Hook. et Bak. Syn. Fil. p. 227.

Athyrium achilleæfolium, Fée, Gen. Fil. p. 186; Fourn. Mex. Pl. Enum. i. p. 101.

Cœnopteris achilleæfolia, Mart. et Gal. Foug. Mex. p. 63, t. 16.

Asplenium athyrioides, Fée, 8e Mém. Foug. p. 83, teste Fourn.

Asplenium grande, Fée, loc. cit. p. 82 (species).

Athyrium grande, Fourn. Mex. Pl. Enum. i. p. 101.

Athyrium conchatum, Fée, Gen. Fil. p. 188, t. 17; Fourn. loc. cit. (species).

South Mexico, Mirador (*Liebmann*), Cerro de San Martin (*Galeotti*, 6569: *conchatum*), Orizaba (*Bourgeau*, 3612), Chiapas &c. (*Ghiesbreght*, 369 *a*), Totutla (*Linden*), cordillera of Vera Cruz 3500 feet (*Galeotti*, 6279), valley of Cordova (*Bourgeau*, 2009:

grande); GUATEMALA, Volcan de Agua (*Salvin*), Chilasco (*Godman & Salvin*). Hb. Kew.

3. **Asplenium (Diplazium) anisophyllum,** Kunze; Hook. Sp. Fil. iii. p. 111, t. 166; Hook. et Bak. Syn. Fil. p. 204; Fourn. in Bull. Soc. Bot. France, xix. p. 257.

Diplazium camptocarpon, Fée, 8e Mém. Foug. p. 84; Fourn. Mex. Pl. Enum. i. p. 109 (species).
Asplenium sanguinolentum, Kunze; Mett. Aspl. p. 98, t. 4. fig. 10; Hook. Sp. Fil. p. 114.
Asplenium feei, Kunze; Fée, Gen. Fil. p. 194, et 7e Mém. Foug. p. 49, t. 15. fig. 2; Fourn. Mex. Pl. Enum. i. p. 106.

GUATEMALA, Chojoja, near Mazatenango (*Bernoulli*, 407); NICARAGUA, Chontales (*Lévy*, 475).—CUBA to BRAZIL; the GALAPAGOS; TROPICAL and EXTRATROPICAL SOUTH AFRICA; BOURBON. Hb. Kew.

4. **Asplenium (Diplazium) arboreum,** Willd.; Hook. Sp. Fil. iii. p. 246; Hook. et Bak. Syn. Fil. p. 233; Bak. in Journ. Bot. 1884, p. 362.

COSTA RICA (*Harrison*).—WEST INDIES; VENEZUELA. Hb. Kew.

5. **Asplenium arcuatum,** Liebm. Mexicos Bregner, p. 89; Hook. Sp. Fil. iii. p. 142, t. 189; Hook. et Bak. Syn. Fil. p. 197; Mett. Aspl. p. 136; Fourn. Mex. Pl. Enum. i. p. 104.

Asplenium curvatum, Liebm. in Fée, 9e Mém. Foug. ex Fourn.
Asplenium obtusissimum, Fée, Gen. Fil. p. 197, ex Mett.

SOUTH MEXICO, Zacuapan 3000 feet (*Liebmann*), cordillera of Vera Cruz at 2000 feet (*Galeotti*, 6299; *Linden*, 69). Hb. Kew.

Fournier cites a number of additional localities, including San Luis Potosi, for this species, of which he distinguishes three varieties.

6. **Asplenium auriculatum,** Swartz; Hook. Sp. Fil. iii. p. 118, t. 171; Hook. et Bak. Syn. Fil. p. 203.

Asplenium discolor, Kunze in Linnæa, ix. p. 65; Fourn. Mex. Pl. Enum. i. p. 105.
Asplenium semicordatum, Raddi, Fil. Bras. p. 36, t. 52. fig. 1; Mett. Aspl. p. 102; Fourn. loc. cit. cum varietatibus.
Asplenium bicrenatum, Liebm. Mexicos Bregner, p. 93.
Asplenium pimpinellifolium, Fée et Schaff. in Fée, 7e Mém. Foug. p. 52, t. 25. fig. 5.

SOUTH MEXICO, around Mexico (*Schmitz*), Oaxaca at 4000 feet (*Galeotti*, 6505: *pimpinellifolium*), Chiapas &c. (*Ghiesbreght*, 425); GUATEMALA, Chilasco (*Salvin & Godman*).—WEST INDIES to PERU and BRAZIL. Hb. Kew.

7. **Asplenium auritum,** Swartz; Hook. Sp. Fil. iii. p. 178; Hook. et Bak. Syn. Fil. p. 208; Fourn. Mex. Pl. Enum. i. p. 106, varietates α. *obscurum*, β. *monodon*, γ. *bipinnatisectum*, δ. *dissectum*, ε. *tripinnatum*, et ζ. *fœniculaceum*; Mart. et Gal. Foug. Mex. p. 58; Fée, Gen. Fil. p. 192.

Asplenium monodon, Liebm., *A. pyramidatum,* Liebm., et *A. corifolium,* Liebm. Mexicos Bregner, pp. 95–97.

Asplenium sulcatum, Lam. Encycl. ii. p. 308; Presl, Reliq. Hænk. i. p. 44.
Asplenium laxum, Desv., *A. schottii*, Presl, et *A. petroselinum*, Liebm. teste Fourn. loc. cit.
Asplenium mexicanum, Mart. et Gal. Foug. Mex. p. 62, t. 15. fig. 4; Kunze in Linnæa, xviii. p. 332.
Asplenium fragrans, Swartz; Hook. Sp. Fil. iii. p. 181; Hook. et Bak. Syn. Fil. p. 216.
Asplenium fœniculaceum, H. B. K. Nov. Gen. et Sp. i. p. 15.
Asplenium recognitum, Kunze; Fée, Gen. Fil. p. 191, teste Hook. Sp. Fil. iii. p. 180.
Asplenium rigidum, Swartz, teste Hook.

South Mexico, Jalapa (*Linden*, 5: *recognitum*), Chiapas &c. (*Ghiesbreght*, 281, 404, 439: *rigidum*), valley of Cordova (*Bourgeau*, 1829: *monodon*), Hacienda de Jovo (*Liebmann*: *monodon*), Jalapa 3000 to 4000 feet (*Galeotti*, 6391: *bipinnatisectum*), valley of Cordova (*Bourgeau*, 1827, in part: *bipinnatisectum*); Guatemala, Vera Paz (*Salvin*), Mazatenango (*Bernoulli*, 464), Coban (*Godman & Salvin*); Salvador, Sonsonate (*Skinner*); Panama (*Seemann*, 9).

Although *A. fragrans* is retained nominally as an independent species in Hooker and Baker's 'Synopsis Filicum,' it is there stated that they held the forms so named as more compound states of *A. auritum*. Among those bearing the name *fragrans* in the Kew Herbarium are:—South Mexico, valley of Cordova (*Bourgeau*, 1827 bis), Oaxaca 5000 feet (*Galeotti*, 6547), Tepitongo, Oaxaca (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 403: *Linden*, 1534), Sierra San Pedro Nolasco, &c. (*Jurgensen*, 789); Guatemala, mountains of Vera Paz (*Salvin*), Volcan de Fuego and Chilasco (*Godman & Salvin*); Panama, Boquete (*Seemann*, 1548).—West Indies to Peru and Brazil; Madagascar; Bourbon; Neilgherries. Hb. Kew.

8. **Asplenium bisectum,** Swartz; Hook. Sp. Fil. iii. p. 152, t. 192; Hook. et Bak. Syn. Fil. p. 211; Bak. in Journ. Bot. 1884, p. 362.

Costa Rica, without locality (*Harrison*).—West Indies and Ecuador. Hb. Kew.

9. **Asplenium bulbiferum,** Forst.; Hook. Sp. Fil. iii. p. 196; Hook. Ic. Pl. t. 423; Hook. et Bak. Syn. Fil. p. 218; Fourn. Mex. Pl. Enum. i. p. 111.
Athyrium macrocarpum, Fée, Gen. Fil. p. 188; Fourn. Mex. Pl. Enum. i. p. 102.
Asplenium myapteron, Fée, 8e Mém. Foug. p. 82, ex Fourn.
Asplenium macrocarpum, Thos. Moore, Ind. Fil.

South Mexico, Chiapas &c. (*Ghiesbreght*, 219), Oaxaca (*Galeotti*, 6555); Guatemala, mountain forests of Vera Paz 7000 feet (*Salvin*), Volcan de Fuego (*Godman & Salvin*). —Mountains of North India to New Zealand, Mascarene Islands, and South Africa. Hb. Kew.

Fournier mentions that he had not seen Mexican specimens of this species.

10. **Asplenium (Diplazium) callipteris,** Baker; Fourn. in Bull. Soc. Bot. France, xix. p. 258; Hook. et Bak. Syn. Fil. p. 231.
Diplazium callipteris, Fée, Gen. Fil. p. 214.

Nicaragua, Chontales (*Lévy*, 503 bis).—West Indies; Peru.

11. **Asplenium caripense,** Fourn. Mex. Pl. Enum. i. p. 106.

Asplenium cuneatum, var. *caripense,* Klotzsch in Linnæa, xx. p. 356, teste Fourn.

South Mexico, on walls at Teapa, Tabasco (*Linden*).—Colombia.

This is probably under some other name in the Kew Herbarium.

12. **Asplenium cicutarium,** Swartz; Hook. Sp. Fil. iii. p. 198; Hook. et Bak. Syn. Fil. p. 220; Fourn. Mex. Pl. Enum. i. p. 110 (varietates plures); Ch. et Schl. in Linnæa, v. p. 612.

Darea cicutaria, Willd. et *D. myriophylla,* Willd. Sp. Pl. v. pp. 300, 301.

Asplenium dissectum, Link, Enum. p. 98, ex Mett. Aspl. p. 116.

South Mexico, Colipa (*Liebmann*), Sierra San Pedro Nolasco &c (*Jurgensen*, 733), valley of Cordova (*Bourgeau*, 1641: γ. *fissum*, Fourn.), around the city of Mexico (*Schmitz*), cordillera of Vera Cruz (*Galeotti*, 6298: *fissum*), Oaxaca 4000 feet (*Galeotti*, 6502); Nicaragua, Chontales (*Lévy*, 1479).—West Indies to Peru and Tropical Africa. Hb. Kew.

13. **Asplenium coriaceum,** Fée, 5e Mém. Foug. p. 193, et 7e Mém. p. 46, t. 15. fig. 1, non Desv. nec Bory, ex Fourn. Mex. Pl. Enum. i. p. 103; Hook. Sp. Fil. iii. p. 89.

Mexico, without locality (*Galeotti*).

Hooker and Mettenius suggest that this may be *A. ensiforme,* Wall., a common Indian species. It may have been wrongly recorded as Mexican.

14. **Asplenium (Diplazium) costale,** Swartz; Hook. Sp. Fil. iii. p. 254; Hook. et Bak. Syn. Fil. p. 236; Bak. in Journ. Bot. 1884, p. 362.

Costa Rica, without locality (*Harrison*).—West Indies to Peru. Hb. Kew.

15. **Asplenium (Diplazium) crenulatum,** Baker in Hook. et Bak. Syn. Fil. p. 236.

Diplazium crenulatum, Liebm. et *D. amplum,* Liebm. Mexicos Bregner, pp. 102 et 104.

Asplenium (*Diplazium*) *expansum,* Willd. ex Fourn. Mex. Pl. Enum. i. p. 109, quoad var. β.

South Mexico, Misantla (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 868), Tabasco (*Linden*, 1491), Aguas Santas, Mirador (*Liebmann: amplum*).—West Indies to Brazil and Ecuador. Hb. Kew.

16. **Asplenium cultrifolium,** Linn.; Hook. Sp. Fil. iii. p. 110; Hook. et Bak. Syn. Fil. p. 203; Bak. in Journ. Bot. 1884, p. 362.

Guatemala, Motagua valley (*Godman & Salvin*); Costa Rica (*Harrison*); Panama, Bojio (*S. Hayes*, 355).—West Indies to Ecuador. Hb. Kew.

17. **Asplenium dentatum,** Linn.; Hook. Sp. Fil. iii. p. 130; Hook. et Bak. Syn. Fil. p. 196; Fourn. Mex. Pl. Enum. i. p. 106; Eaton, Ferns N. Am. ii. p. 249, t. 80. figg. 1–3.

Asplenium polymorphum, Mart. et Gall. quoad exsicc. et in sched. Kunze in Linnæa, xviii. p. 330, teste Fourn. loc. cit.

Florida.—South Mexico, Mirador (*Linden*, 77); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Bermudas; Bahamas; West Indies. Hb. Kew.

18. **Asplenium distans,** Fée, Gen. Fil. p. 198; Fourn. Mex. Pl. Enum. i. p. 109.

South Mexico, Cerro de San Martin, Oaxaca (*Galeotti*, 6529).

An obscure species, founded on one of Galeotti's numbers, which does not appear to be represented in the Kew Herbarium.

19. **Asplenium divaricatum,** Kunze in Linnæa, ix. p. 71; Hook. Sp. Fil. iii. p. 204; Hook. et Bak. Syn. Fil. p. 219; Fourn. Mex. Pl. Enum. i. p. 111.

South Mexico, near Jitotole (*Linden*), caves in the valley of Cordova (*Bourgeau*, 2002).—Colombia to Chili.

We have seen no Mexican specimens of this species, and Bourgeau's 2002 we did not find in the Kew Herbarium.

20. **Asplenium (Athyrium) filix-fœmina,** Bernh.; Hook. Sp. Fil. iii. p. 217; Hook. et Bak. Syn. Fil. p. 227; Eaton, Ferns N. Am. ii. p. 225, t. 76.

Athyrium michauxii, Fée, 8^{e} Mém. Foug. p. 120; Fourn. Mex. Pl. Enum. i. p. 102.
Asplenium michauxii, Spreng. Syst. Veg. iv. p. 88; Mart. et Gal. Foug. Mex. p. 62.
Asplenium dombeyi, Desv. in Ann. Soc. Linn. vi. p. 266; Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 320.
Athyrium bourgæi, Fourn. Mex. Pl. Enum. i. p. 102.
Athyrium martensii, Kunze in Sill. Journ. vi. 1848, p. 86.
Athyrium galeotti, Fée, Gen. Fil. p. 187.

Sitka and Labrador southward.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, San Nicolas (*Bourgeau*, 1042: *bourgæi*), Chiapas &c. (*Ghiesbreght*, 229, 267), Desierto Viejo (*Bourgeau*, 919: *martensii*), San Nicolas (*Bourgeau*, 1037: *dombeyi*), peak of Orizaba 9500 to 12,000 feet (*Galeotti*, 6269: *Linden*, 46; *galeottii*).—West Indies, Venezuela, and Arctic Europe to the mountains of Tropical Africa and India. Hb. Kew.

21. **Asplenium formosum,** Willd. Sp. Pl. v. p. 329; Hook. Sp. Fil. iii. p. 143; Hook. Fil. Exot. t. 16; Hook. et Bak. Syn. Fil. p. 210; Ch. et Schl. in Linnæa, v. p. 612; Mart. et Gal. Foug. Mex. p. 59; Liebm. Mexicos Bregner, p. 89; Fourn. Mex. Pl. Enum. i. p. 104, et in Bull. Soc. Bot. France, xix. p. 257.

Asplenium subalatum, Hook. et Arn. Bot. Beech. Voy. p. 312, t. 71.

South Mexico, without locality (*Beechey: subalatum*), Zacuapan (*Leibold*), Mirador (*Liebmann*), Chiapas (*Ghiesbreght*, 390), Puente Nacional, Vera Cruz, and Oaxaca (*Galeotti*, 6314, 6471), Tepitongo, Oaxaca (*Liebmann*); Guatemala, Alotenango (*Godman & Salvin*); Nicaragua, Chontales and Granada (*Lévy*, 477, 1143); Costa Rica

(*Harrison*); Panama, Obispo Falls (*S. Hayes*, 649).—West Indies to Peru and Brazil, and in Tropical Asia and Africa. Hb. Kew.

22. **Asplenium fournieri,** Kuhn in Bull. Soc. Bot. France, xvii. p. 237, et xix. p. 257.

Nicaragua, Omotepe and Granada (*Lévy*, 1159, 1312).

23. **Asplenium fragile,** Presl; Hook. Sp. Fil. iii. p. 144; Hook. Ic. Pl. t. 932; Mett. Aspl. p. 125; Fourn. Mex. Pl. Enum. i. p. 103.

South Mexico, at the foot of Cerro de las Navajas (*Ehrenberg*).—Colombia to Peru.

24. **Asplenium franconis,** Mett. Aspl. p. 166, t. 50. fig. 30; Hook. Sp. Fil. iii. p. 261; Fourn. Mex. Pl. Enum. i. p. 109, cum β. *gracile*.

Diplazium franconis, Liebm. Mexicos Bregner, p. 104; Fourn. in Bull. Soc. Bot. France, xxii. p. 172.

North Mexico, Tetela del Oro, Sierra Madre (*Rascon*); South Mexico, region of Orizaba (*Bourgeau*, 2606), between Tonagua and Roayaga, Oaxaca 4000 to 5000 feet (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 732), Mirador (*Liebmann*), forest of Chiquihite (*Bourgeau*, 2149 bis: *gracile*), Chiapas (*Ghiesbreght*, 360); Guatemala, Chilasco and Escuintla (*Godman & Salvin*), Volcan de Agua (*Salvin*).—West Indies; Ecuador. Hb. Kew.

25. **Asplenium furcatum,** Thunb.; Hook. Sp. Fil. iii. p. 165; Hook. et Bak. Syn. Fil. p. 214; Fourn. Mex. Pl. Enum. i. p. 107; Benth. Pl. Hartw. p. 55; Mett. Aspl. p. 159; Eaton, in Proc. Am. Acad. xviii. p. 188; Bak. in Journ. Bot. 1884, p. 362.

Asplenium præmorsum, Swartz; Nees in Linnæa, xix. p. 685.

Asplenium nigricans, Kunze in Linnæa, ix. p. 69.

Asplenium laserpitiifolium, Presl, Reliq. Hænk. i. p. 48?, ex Fourn.

North Mexico, San Miguelito Mountains, San Luis Potosi (*Schaffner*, 956); South Mexico, Vera Cruz to Orizaba (*Müller*, 25), valley of Cordova (*Bourgeau*, 1824), Jalapa (*Galeotti*, 6390), Sierra San Pedro Nolasco &c. (*Jurgensen*, 627), Zacuapan (*Leibold*), Pedregal (*Schmitz*), Chiapas &c. (*Ghiesbreght*, 215, 282); Guatemala, without locality (*Skinner*), Coban (*Salvin & Godman*); Costa Rica (*Harrison*).—West Indies to Peru, and widely spread in the Old World. Hb. Kew.

26. **Asplenium ghiesbreghtii,** Fourn. Mex. Pl. Enum. p. 111, t. 5; Hook. et Bak. Syn. Fil. ed. 2, p. 492.

South Mexico, Barranca de Tlacolula (*Ghiesbreght*).

27. **Asplenium (Athyrium) gracile,** Fourn. Mex. Pl. Enum. p. 102.

South Mexico, Pedregal, valley of Mexico (*Bourgeau*, 252).

28. **Asplenium (Diplazium) grandifolium,** Swartz; Hook. Sp. Fil. iii. p. 241; Hook. et Bak. Syn. Fil. i. p. 231; Fourn. in Bull. Soc. Bot. France, xix. p. 258.

NICARAGUA, Chontales (*Tate*, 503; *Lévy*, 503).—CUBA to PERU and BRAZIL. Hb. Kew.

29. **Asplenium hahnii,** Fourn. Mex. Pl. Enum. i. p. 109.

SOUTH MEXICO, Escamela, near Orizaba (*Hahn*).

30. **Asplenium (Diplazium) harrisoni,** Bak. in Journ. Bot. 1884, p. 362.

COSTA RICA, without locality (*Harrison*). Hb. Kew.

31. **Asplenium hastatum,** Klotzsch; Hook. Sp. Fil. iii. p. 116, t. 172; Hook. et Bak. Syn. Fil. p. 205.

GUATEMALA, Coban (*Godman & Salvin*).—JAMAICA; COLOMBIA; ECUADOR. Hb. Kew.

32. **Asplenium (Anisogonium) kunzei,** Mett. Aspl. p. 171; Hook. Sp. Fil. iii. p. 266; Hook. et Bak. Syn. Fil. p. 243; Fourn. in Bull. Soc. Bot. France, xix. p. 258.

NICARAGUA, Chontales (*Lévy*).—ECUADOR and PERU.

33. **Asplenium lacerum,** Ch. et Schl. in Linnæa, v. p. 612; Mett. Aspl. p. 105, t. 5. fig. 26; Hook. Sp. Fil. iii. p. 183; Fourn. Mex. Pl. Ennm. i. p. 107.

SOUTH MEXICO, Orizaba (*Botteri*, 49), Jalapa (*Schiede & Deppe*).

34. **Asplenium lætum,** Swartz; Hook. Sp. Fil. iii. p. 133, t. 173; Hook. et Bak. Syn. Fil. p. 210.

Asplenium schkuhriana, Presl, Tent. Pterid. p. 107; Klotzsch in Linnæa, xx. p. 355; Fourn. Mex. Pl. Enum. i. p. 105.

Asplenium lugubre, Liebm., et *A. miradorense,* Liebm. Mexicos Bregner, p. 91.

Asplenium fraternum, Fée, 9e Mém. Foug. p. 16, ex Fourn.

Asplenium nanum, Willd.; Fourn. Mex. Pl. Enum. i. p. 104.

SOUTH MEXICO, Tabasco (*Linden*, 1493), cordillera of Vera Cruz 4500 feet (*Galeotti*, 6288), Chiapas &c. (*Ghiesbreght*, 426), forests of Chiquihite (*Bourgeau*, 2151), Mirador (*Liebmann: schkuhrianum*), Mirador (*Liebmann: miradorense*); NICARAGUA, Realejo (*Sinclair*); PANAMA (*Seemann*, 369: *fraternum*).—CUBA; COLOMBIA. Hb. Kew.

35. **Asplenium lamprocaulon,** Fée, 5e Mém. Foug. p. 197, ex Fourn. Mex Pl. Enum. i. p. 105.

Asplenium semicordatum, Mart. et Gal. Foug. Mex. p. 59, non Raddi.

SOUTH MEXICO, Llano Verde 7000 feet (*Galeotti*, 6340), "Yerba Buena" (*Linden*).

36. **Asplenium levyi,** Fourn. in Bull. Soc. Bot. France, xix. p. 257.

NICARAGUA, Chontales (*Lévy*, 474).

37. **Asplenium (Diplazium) lindbergii,** Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 318; Hook. et Bak. Syn. Fil. p. 236; Fourn. Mex. Pl. Enum. i. p. 109, et in Bull. Soc. Bot. France, xix. p. 258.

SOUTH MEXICO, Mirador (*Linden*, 20), Chiapas &c. (*Ghiesbreght*, 364); NICARAGUA, Chontales (*Lévy*, 1459).—COLOMBIA to BRAZIL. Hb. Kew.

38. **Asplenium lunulatum,** Swartz; Hook. et Bak. Syn. Fil. p. 202; Fourn. Mex. Pl. Enum. p. 105, partim.

Asplenium erectum, Bory in Willd. Sp. Pl. v. p. 328; Hook. Sp. Fil. iii. p. 126; Mett. Aspl. p. 122; Fourn. loc. cit., *β. harpeodes.*

Asplenium falcatum, Mart. et Gal. Foug. Mex. p. 58, non Willd.

Asplenium harpeodes, Kunze in Linnæa, xviii. p. 329; Liebm. Mexicos Bregner, p. 90.

Asplenium pendulum, Fée, Gen. Fil. p. 196.

Asplenium resupinum, Lherm. ex Fourn.

South Mexico, Chiapas &c. (*Ghiesbreght*, 391, 424, 435), Itzhuatlancillo (*Bourgeau*, 2369: *lunulatum*, γ. *latius*), Vera Cruz to Orizaba (*Müller*, 76), Totutla 4000 feet (*Galeotti*, 6407: *erectum*, β. *harpeodes*, Fourn.); Guatemala, Chilasco (*Godman & Salvin*), Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 23).—Generally dispersed in the Tropics and extending into some parts of the South Temperate Zone. It is also found in many remote islands, as Ascension, St. Helena, Tristan da Cunha, and Juan Fernandez. Hb. Kew.

39. **Asplenium (Diplazium) macrotis,** Bak. in Journ. Bot. 1884, p. 362.

Costa Rica, without locality (*Harrison*). Hb. Kew.

40. **Asplenium (Hemidictyum) marginatum,** Linn.; Hook. Sp. Fil. iii. p. 271; Hook. Fil. Exot. t. 63; Hook. et Bak. Syn. Fil. p. 246.

South Mexico, Chiapas &c. (*Ghiesbreght*, 378); Nicaragua, Chontales (*Tate*, 29; *Seemann*, 194).—Cuba to Peru and Brazil. Hb. Kew.

41. **Asplenium monanthemum,** Linn.; Hook. Sp. Fil. iii. p. 140; Hook. et Bak. Syn. Fil. p. 197; Fourn. Mex. Pl. Enum. i. p. 103; Eaton in Proc. Am. Acad. xviii. p. 188.

Asplenium galeottii, Fée, Gen. Fil. p. 192.

Asplenium leptophyllum, Fée, 7^e^ Mém. Foug. p. 50, t. 14. fig. 2.

Asplenium inæquilaterale, Mart. et Gal. Foug. Mex. p. 57, non Willd.

Arizona.—Mexico, common and ranging from 1000 to 11,500 feet (*Galeotti*, 6262, 6296, 6369, 6370, 6365, 6479, 6556; *Ghiesbreght*, 243, 245, 289; *Coulter*, 1701; *Bourgeau*, 260, 1047; *Linden*, 1535, 1554); Guatemala (*Skinner; Salvin & Godman*); Nicaragua (*Sinclair*).—Jamaica and through the Andes to Chili; Africa; Polynesia &c. Hb. Kew.

42. **Asplenium moritzianum,** Klotzsch, var. **depauperatum,** ex Fourn. Mex. Pl. Enum. i. p. 102.

Athyrium moritzianum, Fourn. loc. cit.

South Mexico, Oaxaca (*Galeotti*, 6503).—Colombia; Venezuela.

We probably have this under some other name at Kew.

43. **Asplenium nigricans,** Eaton; Hook. et Bak. Syn. Fil. ed. 2, p. 483.

South Mexico, Chiapas &c. (*Ghiesbreght*, 377). Hb. Kew.

44. **Asplenium obesum,** Baker in Hook. et Bak. Syn. Fil. p. 209.

GUATEMALA, Volcan de Fuego (*Godman & Salvin*, 119). Hb. Kew.

45. **Asplenium obtusifolium,** Linn.; Hook. Sp. Fil. iii. p. 119, t. 169; Hook. et Bak. Syn. Fil. p. 202.

Asplenium riparium, Liebm. Mexicos Bregner, p. 92.

Asplenium repandulum, Kunze in Linnæa, ix. p. 65; Mart. et Gal. Foug. Mex. p. 56.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 2014), Mirador (*Linden*, 68), Jalapa (*Harris*), cordillera of Vera Cruz (*Galeotti*, 6274), Hacienda de Jovo (*Liebmann*), Santa Rita near Misantla (*Hahn*, 362), Chiapas &c. (*Ghiesbreght*, 416).—WEST INDIES to SOUTH BRAZIL. Hb. Kew.

46. **Asplenium (Diplazium) plantagineum,** Linn.; Hook. Sp. Fil. iii. p. 237; Hook. et Bak. Syn. Fil. p. 230; Fourn. Mex. Pl. Enum. i. p. 108 (cum β. *crenatum*), et in Bull. Soc. Bot. France, xix. p. 257.

Diplazium plantagineum, Swartz; Liebm. Mexicos Bregner, p. 100.

Diplazium acuminatum, Lodd.; Mart. et Gal. Foug. Mex. p. 51.

SOUTH MEXICO, Jalapa 4000 feet (*Galeotti*, 6398), Mirador (*Linden*, 28), valley of Mexico (*Schmitz*), valley of Cordova (*Bourgeau*, 2013), Chiapas &c. (*Ghiesbreght*, 441); GUATEMALA, without locality (*Skinner*), Coban (*Godman & Salvin*); NICARAGUA, Chontales (*Seemann*, 199).—WEST INDIES to BRAZIL. Hb. Kew.

47. **Asplenium pumilum,** Swartz; Hook. Sp. Fil. iii. p. 174; Hook. et Bak. Syn. Fil. p. 212; Fée, 7ᵉ Mém. Foug. t. 15. fig. 4; Liebm. Mexicos Bregner, p. 95; Fourn. Mex. Pl. Enum. i. p. 106; Eaton in Proc. Am. Acad. xviii. p. 188; Bak. in Journ. Bot. 1884, p. 362.

Asplenium anthriscifolium, Jacq. Coll. ii. p. 103, t. 2. figg. 3 et 4.

Asplenium minimum, Mart. et Gal. Foug. Mex. p. 55, t. 15. fig. 1.

NORTH MEXICO, San Luis Potosi to Tampico (*Palmer*, 1157); SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*, 2331; *Bourgeau*, 2783), San Blas (*Beechey*), Teapa (*Linden*, 1486); GUATEMALA, San Gerónimo (*Godman & Salvin*); COSTA RICA (*Harrison*); PANAMA, Boquete, Veraguas (*Seemann*).—WEST INDIES to COLOMBIA, and in ZANGUEBAR and NORTH INDIA. Hb. Kew.

48. **Asplenium (Diplazium) radicans,** Schkuhr; Hook. et Bak. Syn. Fil. p. 241.

Asplenium dubium, Mett.; Hook. Sp. Fil. iii. p. 261, partim.

SOUTH MEXICO, Chiapas &c. (*Ghiesbreght*, 362).—CUBA to PERU and BRAZIL. Hb. Kew.

A ambiguum, Raddi? (Fourn. in Bull. Soc. Bot. France, xix. p. 257), from Nicaragua (*Lévy*, 1471), may be this species.

49. **Asplenium rhizophorum,** Linn.; Hook. Sp. Fil. iii. p. 122, t. 187 A; Hook. et Bak. Syn. Fil. p. 204; Bak. in Journ. Bot. 1884, p. 362.

Asplenium amabile, Liebm. Mexicos Bregner, p. 99.

Asplenium flabellulatum, Kunze in Linnæa, ix. p. 71.

South Mexico, Pochutla, Oaxaca (*Liebmann*), Chiapas (*Ghiesbreght*, 423); Guatemala, Coban and Chilasco (*Godman & Salvin*); Costa Rica (*Harrison*).—West Indies to Peru and Solomon Islands. Hb. Kew.

This is a very variable fern, exhibiting pinnate, bipinnate, and tripinnate varieties; those from within our limits are all bi- or tripinnate, excepting one from Costa Rica.

50. **Asplenium rhizophyllum,** Kunze; Hook. Sp. Fil. iii. p. 200; Hook. et Bak. Syn. Fil. p. 220; Fourn. Mex. Pl. Enum. p. 110; Liebm. Mexicos Bregner, p. 99.

Asplenium myriophyllum, Presl, Reliq. Hænk. i. p. 18; Eaton, Ferns N. Am. ii. p. 37, t. 51. figg. 1–3.

Cænopteris myriophylla, Willd.; Mart. et Gal. Foug. Mex. p. 63.

Asplenium verecundum, Chapm.; Fourn. Mex. Pl. Enum. i. p. 111.

Florida.—South Mexico, cordillera of Oaxaca (*Galeotti*, 6250), Chiapas (*Linden*, 1548), Vera Cruz to Orizaba (*Müller*, 1495); Guatemala, Coban (*Godman & Salvin*); Cocos Island (*Hinds*).—Tropical America; Polynesia. Hb. Kew.

51. **Asplenium rutaceum,** Mett.; Hook. Sp. Fil. iii. p. 203; Hook. 2nd Cent. Ferns, t. 34; Hook. et Bak. Syn. Fil. p. 220.

South Mexico, Lobani, Oaxaca (*Liebmann*), Chiapas &c. (*Ghiesbreght*).—Jamaica to Ecuador and in the Galapagos. Hb. Kew.

Some of the forms referred to *A. rutaceum* might with equal propriety be referred to *A. rhizophyllum.*

52. **Asplenium salicifolium,** Linn.; Hook. Sp. Fil. iii. p. 112; Hook. et Bak. Syn. Fil. p. 200; Fourn. in Bull. Soc. Bot. France, xix. p. 257.

Nicaragua, Chontales (*Tate*, 232, 233; *Lévy*, 515 bis); Panama (*Seemann*, 261).—West Indies to Peru and Rio Janeiro. Hb. Kew.

53. **Asplenium schaffneri,** Fourn. Mex. Pl. Enum. p. 110.

Diplazium feei, Schaff. in Fée, 8e Mém. Foug. p. 85, et 9e Mém. p. 19, ex Fourn.

South Mexico, Barranca de San Martin, near Orizaba (*Schaffner*).

54. **Asplenium serra,** Langsd. et Fisch.; Hook. Sp. Fil. iii. p. 154; Hook. et Bak. Syn. Fil. p. 206; Fourn. Mex. Pl. Enum. i. p. 107, cum var. β.

Asplenium insigne, Liebm. Mexicos Bregner, p. 94.

Asplenium progrediens, Fée, 8e Mém. Foug. p. 81.

South Mexico, Chiapas &c. (*Ghiesbreght*), Itzhuatlancillo (*Bourgeau*, 2781), valley of Cordova (*Bourgeau*, 1842); Guatemala, Coban and Choctum (*Godman & Salvin*), Las Nubes (*Hartweg*); Nicaragua, Realejo (*Sinclair*), without locality (*Tate*, 25).—Cuba to Peru and Brazil, and in Tropical Africa. Hb. Kew.

55. **Asplenium serratum,** Linn.; Hook. Sp. Fil. iii. p. 81; Hook. et Bak. Syn. Fil. p. 193; Fourn. Mex. Pl. Enum. i. p. 103 (var. *latius*); Eaton, Ferns N. Am. i. p. 17, t. 3.

Asplenium nidus, Raddi, Fil. Bras. p. 34, t. 53, non Linn.

Florida.—South Mexico, Oaxaca 2500 feet (*Galeotti*, 6482); Guatemala, San Gerónimo (*Godman & Salvin*), Chilion near Mazatenango (*Bernoulli*, 424); Nicaragua, Chontales (*Lévy*, 486; *Tate*, 400); Panama (*Seemann*, 3).—West Indies to Peru and Brazil, and in Polynesia. Hb. Kew.

56. **Asplenium sessilifolium,** Desv. in Berl. Mag. v. p. 322, ex Fourn. Mex. Pl. Enum. i. p. 104.

North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, Cofre de Perote (*Hahn*).—Colombia; Peru.

This is reduced to *A. triphyllum*, Presl, in the 'Synopsis Filicum,' and there are no specimens of that species from within our limits in the Kew Herbarium.

57. **Asplenium (Diplazium) shepherdi,** Spreng.; Hook. et Bak. Syn. Fil. p. 233; Fourn. Mex. Pl. Enum. i. p. 108; Bak. in Journ. Bot. 1884, p. 362.

Diplazium shepherdi, Link, Sp. Fil. p. 84.

Diplazium anthraxacolepis, Fée, 8e Mém. Foug. p. 84.

Asplenium denticulosum, Desv. Berl. Mag. v. p. 323; Mart. et Gal. Foug. Mex. p. 61; Fourn. loc. cit. (species).

Diplazium inæquilaterum, Liebm. Mexicos Bregner, p. 103; Fourn. in Bull. Soc. Bot. France, xxii. p. 172 (species).

Asplenium inæquilaterale, Liebm.; Fée, 9e Mém. Foug. p. 17.

Asplenium auriculatum, Mett. Aspl. p. 164.

Asplenium arboreum, Willd.; Hook. et Bak. Syn. Fil. p. 233 (species).

Diplazium actuale, Fée, Gen. Fil. p. 215, ex Fourn.

Asplenium aspidiiforme, Fée, Gen. Fil. p. 199; Fourn. loc. cit. (species).

Asplenium schiedei, Mett. Aspl. p. 165; Fourn. loc. cit. (species).

Diplazium lonchophyllum, Kunze in Linnæa, xiii. p. 141, et xviii. p. 633; Liebm. Mexicos Bregner, p. 102.

North Mexico, Tetela del Oro, Sierra Madre (*Rascon*); South Mexico, Chiapas (*Ghiesbreght*, 361), valley of Cordova (*Bourgeau*, 1441: *denticulosum*), region of Orizaba (*Bourgeau*, 2364: *schiedei*); Guatemala, Chilasco (*Godman & Salvin: auriculatum*); Nicaragua, Chontales (*Lévy*, 515: *denticulosum*); Costa Rica (*Harrison*).—Cuba to Peru and South Brazil. Hb. Kew.

58. **Asplenium (Athyrium) skinneri,** Bak. in Hook. et Bak. Syn. Fil. p. 226.

Athyrium skinneri, Thos. Moore, Ind. Fil.; Fourn. in Bull. Soc. Bot. France, xix. p. 256.

Guatemala, without locality (*Skinner; Godman & Salvin*, 285); Nicaragua, near Granada (*Lévy*, 380). Hb. Kew.

59. **Asplenium (Darea) solmsii,** Baker, n. sp.

"A stipite elongato basi paleis castaneis lanceolatis firmulis prædito; frondibus oblongo-lanceolatis

tripinnatifidis glabris viridibus, pinnis lanceolatis, pinnulis sessilibus lanceolatis profunde pectinato-pinnatifidis, segmentis tertiareis erecto-patentibus lanceolatis segregatis 5–6-jugis; soris oblongis marginalibus. Lamina pedalis et ultra, 6–7 poll. lata, stipite 6–8 pollicari; pinnæ inferiores 3–4 poll. longæ, 12–18 lineas latæ; pinnulæ centrales 9–10 lineas longæ, segmentis tertiareis 1½ lineas longis. Ad *A. bulbiferi* formas dareoideas magis accedit." *Baker MSS.*

Guatemala, Cuesta de Atitlan (*Bernoulli & Cario*, 317). Hb. Kew.

60. **Asplenium (Diplazium) sylvaticum,** Presl; Hook. Sp. Fil. iii. p. 248, partim; Hook. et Bak. Syn. Fil. p. 232; Bak. in Journ. Bot. 1884, p. 362.

Costa Rica, without locality (*Harrison*).—Tropical Asia and Africa, and in Polynesia. Hb. Kew.

This appears to be the first and only record of the occurrence of this species in America.

61. **Asplenium (Anisogonium) ternatum,** Hook. Sp. Fil. iii. p. 265; Hook. et Bak. Syn. Fil. p. 242; Fourn. Mex. Pl. Enum. i. p. 108.

Diplazium ternatum, Liebm. Mexicos Bregner, p. 100.

South Mexico, between Tonagua and Roayaga, and Teotalcingo, Oaxaca (*Liebmann*), Misantla (*Hahn*). Hb. Kew.

62. **Asplenium trichomanes,** Linn.; Hook. Sp. Fil. iii. p. 136; Hook. et Bak. Syn. Fil. p. 196; Eaton, Ferns N. Am. ii. p. 271, t. 36. figg. 1–3, et in Proc. Am. Acad. xviii. p. 188.

Asplenium heterochroum, Kunze in Linnæa, ix. p. 67; Mart. et Gal. Foug. Mex. p. 60; Fourn. Mex. Pl. Enum. i. p. 103 (species).

Asplenium resiliens, Kunze in Linnæa, xviii. p. 331; Liebm. Mexicos Bregner, p. 88.

Asplenium parvulum, Mart. et Gal. Foug. Mex. p. 60, t. 15. fig. 3; Eaton, Ferns N. Am. i. p. 279, t. 36. figg. 5 et 6, non Hook. (species).

Asplenium rhizophorum et *A. erectum*?, Mart. et Gal. loc. cit. ex Fourn.

Asplenium trichomanoides, Kunze in Sillim. Journ. July 1848, p. 5, non Michaux, fide Eaton.

Asplenium densum, Brock. in Bot. Am. Expl. Exped. p. 152, t. 20. fig. 3.

Asplenium melanocaulon, Willd.; Fourn. loc. cit. p. 104 (species).

Asplenium castaneum, Ch. et Schl. in Linnæa, v. p. 611; Kunze in Linnæa, xviii. p. 332; Fourn. loc. cit. (species).

Canada and British Columbia southward.—Mexico, very common and ascending to 11,000 feet; Guatemala, Alotenango and Volcan de Fuego above 11,000 feet (*Godman & Salvin*).—Colombia to Peru, and widely dispersed in North and South Temperate Regions. Hb. Kew.

Tribe IX. SCOLOPENDRIEÆ.

This Tribe is limited to the genus *Scolopendrium.*

25. SCOLOPENDRIUM.

Scolopendrium, Smith; Hook. et Bak. Syn. Fil. p. 246, t. 4. fig. 41.

There are nine species of this genus, which is restricted to the northern hemisphere, except two peculiar and distinct Brazilian species, constituting the genus *Antigramme* of Presl.

1. **Scolopendrium (Schaffneria) nigripes,** Hook. Sp. Fil. iv. p. 3; Hook. et Bak. Syn. Fil. p. 247.

Schaffneria nigripes, Fée, 8e Mém. Foug. p. 56, t. 17; Fourn. Mex. Pl. Enum. i. p. 111.
Asplenium (*Schaffneria*) *nigripes,* Hook. Kew Journ. Bot. ix. p. 268, t. 9.

South Mexico, valley of Cordova (*Bourgeau*, 2003), Vera Cruz to Orizaba (*Müller*, 693; *Schaffner*, 47), Chiapas (*Ghiesbreght*, 302); Guatemala, Yzabal (*Godman & Salvin*). Hb. Kew.

2. **Scolopendrium vulgare,** Sm.; Hook. Sp. Fil. iv. p. 1; Hook. et Bak. Syn. Fil. p. 247; Eaton, Ferns N. Am. i. p. 247, t. 32. figg. 1 et 2.

Scolopendrium lindeni, Hook. Ic. Pl. t. 488.

Canada southward.—South Mexico, Chiapas (*Linden*, 1543; *Ghiesbreght*, 296, 307). —Madeira, the Azores, and Britain to Persia and Japan. Hb. Kew.

Fournier does not include this fern in his Enumeration.

Tribe X. ASPIDIEÆ.

Six genera, five of which are known to be represented within our area; the other is *Fadyenia*, a monotype, which has hitherto been found only in Cuba and Jamaica.

26. DIDYMOCHLÆNA.

Didymochlæna, Desv.; Hook. et Bak. Syn. Fil. p. 248, t. 4. fig. 42.

Besides the following there is one other species, which inhabits the Malay Peninsula and Archipelago.

1. **Didymochlæna lunulata,** Desv.; Hook. Sp. Fil. iv. p. 5, et Gard. Ferns, t. 17; Hook. et Bak. Syn. Fil. p. 248.

Didymochlæna sinuosa, Desv. Journ. de Bot. 1813, i. p. 23, t. 2. fig. 4; Fourn. Mex. Pl. Enum. i. p. 131, et in Bull. Soc. Bot. France, xix. p. 259.

South Mexico, Mount Algodon, three leagues from Misantla (*Hahn*); Guatemala, Choctum (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 30; *Lévy*, 469).—Cuba to Peru and Brazil; Africa; Mascarene Islands; Malay Peninsula and Archipelago and the Fiji Islands. Hb. Kew.

27. ASPIDIUM.

Aspidium, Swartz, partim; Hook. et Bak. Syn. Fil. p. 248, et ed. 2, p. 492.

A generally diffused genus of about sixty species.

1. **Aspidium (Polystichum) aculeatum,** Swartz; Hook. Sp. Fil. iv. p. 18; Hook. et Bak. Syn. Fil. p. 252; Eaton in Proc. Am. Acad. xviii. p. 188, et Ferns N. Am. ii. p. 123, t. 62; Mart. et Gal. Foug. Mex. p. 67; Benth. Pl. Hartw. p. 37.

Polystichum pallidum, Fourn., *P. distans,* Fourn., *P. Mülleri,* Fourn., *P. confluens,* Fourn., et *P. drepanoides,* Fourn. Mex. Pl. Enum. i. pp. 91 et 92 (species propriæ).

Polystichum platyphyllum, Fourn. loc. cit. p. 91, vix Presl.

Polystichum muricatum, Fée, *P. grande,* Fée, *P. ordinatum,* Fée, et *P. rhachichlæna,* Fée ex Fourn. loc. cit.

Aspidium muricatum, Willd. Sp. Pl. v. p. 264; Kuhn, Beitr. Mex. Farrnkr. p. 11.

Polystichum moritzianum, Klotzsch in Linnæa, xx. p. 367.

Polystichum ordinatum, Liebm. Mexicos Bregner, p. 123.

Polystichum vestitum, Presl (*Aspidium vestitum,* Swartz), Kunze in Linnæa, xiii. p. 148; Schkuhr Krypt. Gewäch. t. 43.

Aspidium hartwegii, Klotzsch in Linnæa, xx. p. 366.

Aspidium crinitum, Mart. et Gal. Foug. Mex. p. 66.

Canada and British Columbia, southward.—Mexico, exceedingly common and variable. The following specimens represent the principal forms in the Kew Herbarium: Region of Orizaba at Itzhuatlancillo (*Bourgeau,* 2350: *ordinatum*), Desierto Viejo (*Bourgeau,* 914: *rhachichlæna*), between San Bartolo and Pueblo Nuevo, Chiapas (*Linden,* 1536: *mülleri*), Huatusco (*Liebmann: muricatum*), Itzhuatlancillo (*Bourgeau,* 2350 bis: *distans*); Guatemala, Las Nubes (*Hartweg,* 631: *hartwegii*); Panama, Boquete (*Seemann,* 1118: *vestitum*).—Everywhere except the coldest regions. Hb. Kew.

[*A. amplificatum,* Fée ex Fourn. Mex. Pl. Enum. i. p. 94=*Polystichum amplificatum,* Fée, 8e Mém. Foug. p. 89 et 9e Mém. p. 23, is an obscure species. It is recorded from Cordova, Schaffner. *A. cheiloplotium,* Fée, 8e Mém. p. 103, from Orizaba, is in the same category.]

2. **Aspidium (Cyrtomium) juglandifolium,** Kunze; Hook. Sp. Fil. iv. p. 38; Hook. et Bak. Syn. Fil. p. 257; Eaton, Ferns N. Am. ii. p. 221, t. 75. fig. 5–8.

Polypodium juglandifolium, H. B. K. Nov. Gen. et Sp. vii. t. 665.

Phanerophlebia juglandifolia, J. Sm. in Hook. Journ. Bot. iv. p. 187; Fourn. Mex. Pl. Enum. i. p. 100.

Amblia juglandifolia, Presl, Tent. Pterid. p. 185; Fourn. in Bull. Soc. Bot. France, xxii. p. 171.

Phanerophlebia nobilis, Presl, Tent. Pterid. p. 85, t. 2. fig. 19; Hook. Gen. Fil. t. 49 A; Liebm. Mexicos Bregner, p. 124.

Phanerophlebia lindeni, Fourn., et *P. remotispora,* Fourn. loc. cit.

Phanerophlebia pumila, Fée, Gen. Fil. p. 282.

Cyrtomium juglandifolium, Thos. Moore, et *C. nobile,* Thos. Moore, Ind. Fil. ii. p. 277.

Aspidium pumilum, Mart. et Gal. Foug. Mex. p. 64, t. 17. fig. 1.

Aspidium nobile, Ch. et Schl. in Linnæa, v. p. 610; Kunze, Farrnkr. t. 67.

Texas.—North Mexico, Tetela del Oro, Sierra Madre (*Rascon*), San Luis Potosi (*Virlet d'Aoust*); South Mexico, Chiapas &c. (*Ghiesbreght,* 414), Mirador (*Liebmann*), around Mexico (*Schmitz; Schaffner; Graham*); region of Oaxaca (*Galeotti,* 6343, 6554), region of Orizaba (*Bourgeau,* 2348), pine forests of Ciudad Real, Chiapas

(*Linden*, 1551: *lindeni*), the same locality (*Linden*, 1554; *Ghiesbreght*, 209: *pumila*), region of Orizaba (*Bourgeau*, 2349: *remotispora*); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Venezuela. Hb. Kew.

3. **Aspidium (Cyclodium) meniscoides,** Willd.; Hook. Sp. Fil. iv. p. 36; Hook. et Bak. Syn. Fil. p. 256.

Aspidium meniscoides, Presl, Fourn. in Bull. Soc. Bot. France, xix. p. 256.
Aspidium confertum, Hook. et Grev. Ic. Fil. t. 121.

Nicaragua, Chontales (*Lévy*, 1459).—West Indies to Peru and Brazil. Hb. Kew.

4. **Aspidium nicaraguense,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 493.

Bathmium nicaraguense, Fourn. in Bull. Soc. Bot. France, xix. p. 256; Bot. Zeit. 1873, p. 7.

Nicaragua, Chontales (*Tate*, 451; *Lévy*, 451). Hb. Kew.

5. **Aspidium (Polystichum) melanostictum,** Kunze; Hook. Sp. Fil. iv. p. 34, t. 233 B; Hook. et Bak. Syn. Fil. p. 256; Mart. et Gal. Foug. Mex. p. 68; Fourn. Mex. Pl. Enum. i. p. 98.

Polystichum melanostictum, Liebm. Mexicos Bregner, p. 124.

South Mexico, region of Orizaba (*Bourgeau*, 2360), forests around Misantla (*Hahn*), Mirador (*Liebmann*), Jalapa 4000 feet (*Galeotti*, 6320), forest of Chiquihite (*Bourgeau*, 2148). Hb. Kew.

[*Aspidium* (*Polystichum*) *seemanni*, Hook. Sp. Fil. iv. p. 34, t. 230, is incorrectly recorded from Panama in the 'Synopsis Filicum,' instead of the Bay of Ardita, which is situated a considerable distance to the south.]

6. **Aspidium (Polystichum) semicordatum,** Swartz; Hook. Sp. Fil. iv. p. 16; Hook. et Bak. Syn. Fil. p. 249; Fourn. in Bull. Soc. Bot. France, xix. p. 255.

Nephrodium semicordatum, Presl, Reliq. Hænk. p. 32.

South Mexico, Chiapas (*Ghiesbreght*, 411); Guatemala, Motagua valley (*Godman & Salvin*); Nicaragua, Chontales and Granada (*Lévy*, 291, 1150); Panama, Rio Obispo (*S. Hayes*, 74), without locality (*Seemann*).—Cuba to Peru; Malay Peninsula and Archipelago; Philippines. Hb. Kew.

7. **Aspidium trifoliatum,** Swartz; Hook. Sp. Fil. iv. p. 45; Hook. et Bak. Syn. Fil. p. 258; Eaton in Proc. Am. Acad. xviii. p. 188.

Bathmium trifoliatum, Link, Fil. Sp. p. 114; Fourn. Mex. Pl. Enum. i. p. 99.
Polypodium cordifolium, Mart. et Gal. Foug. Mex. p. 31, t. 4. fig. 2.
Drynaria cordifolia, Fée, 5e Mém. Foug. p. 270.
Aspidium heracleifolium, Willd. Sp. Pl. v. p. 147; Mart. et Gal. loc. cit. p. 65.
Bathmium heracleifolium, Fée, 5e Mém. Foug. p. 287; Fourn. in Bull. Soc. Bot. France, xxii. p. 171.

Florida.—North Mexico, Tetela del Oro, Sierra Madre (*Rascon*), San Luis Potosi (*Virlet d'Aoust*), Guajuco, Nuevo Leon (*Palmer*, 1437); South Mexico, around the city of Mexico (*Schmitz*), Teotalcingo, Oaxaca (*Liebmann*), valley of Cordova (*Bourgeau*,

1939), Cuernavaca, valley of Mexico (*Bourgeau*, 1314), Chiapas &c. (*Ghiesbreght*, 408), Jalapa (*Harris*), Puente Nacional, Vera Cruz (*Galeotti*, 6312), Mirador (*Linden*, 25; *Liebmann*); GUATEMALA, Choctum and Escuintla (*Godman & Salvin*); NICARAGUA, Chontales (*Tate*, 38, 39; *Lévy*, 500; *Seemann*, 205); PANAMA (*Seemann*, 1).—BAHAMAS to PERU and BRAZIL. Hb. Kew.

28. NEPHRODIUM.

Nephrodium, Rich.; Hook. et Bak. Syn. Fil. p. 259, et ed. 2, p. 493, t. 5. fig. 44.

Of this genus there are 285 species described in the second edition of Hooker and Baker's 'Synopsis Filicum,' and they are spread over nearly the whole area of the Order.

1. **Nephrodium (Lastrea) amplum,** Bak. in Hook. et Bak. Syn. Fil. p. 285.

Polypodium (*Phegopteris*) *sloanei*, Kunze in Linnæa, ix. p. 251, et xviii. p. 322; Hook. Sp. Fil. iv. p. 263; Liebm. Mexicos Bregner, p. 55.
Nephrodium (*Lastrea*) *palatanganum*, Hook. Sp. Fil. iv. p. 260.
Aspidium amplum, Mett. Pheg. und Aspid. p. 74, excl. synon. Eat. Fil. Wright; Fourn. Mex. Pl. Enum. i. p. 98.
Aspidium equestre, Kunze in Linnæa, xviii. p. 347; Fourn. loc. cit. (species).
Lastrea equestris, Liebm., et *L. ciliata*, Liebm. Mexicos Bregner, p. 121.
Aspidium excelsum, Mett. excl. synon. fide Fourn.
Phegopteris inæqualis, Fée, 8e Mém. Foug. p. 91, et 9e Mém. Foug. p. 23, fide Fourn. loc. cit. ut syn. *A. equestris*.
Aspidium bourgæi, Fourn. Mex. Pl. Enum. i. p. 98 (species).
Phegopteris galeottii, Fée, Gen. Fil. p. 243; Fourn. loc. cit. (species).
Polypodium galeottii, Mart. in Mart. et Gal. Foug. Mex. p. 43, t. 7. fig. 3.
Phegopteris stenolepis, Fée, 8e Mém. Foug. p. 89.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1838: *equestre*, 1839: *bourgæi*, 1790), Mirador (*Liebmann*); GUATEMALA, Choctum and Coban (*Godman & Salvin*); PANAMA, Lion Hill (*S. Hayes*, 376), without locality (*Cuming*, 1300).—WEST INDIES to ECUADOR; and there is a plant in the Kew Herbarium from Pitcairn Island which may be the same species. Hb. Kew.

2. **Nephrodium (Sagenia) athyrioides,** Bak. in Journ. Bot. 1884, p. 363.

COSTA RICA, without locality (*Harrison*). Hb. Kew.

3. **Nephrodium brachyodon,** Hook. Sp. Fil. iv. p. 83; Hook. et Bak. Syn. Fil. p. 295.

Phegopteris seemanni, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 228, t. 49.
Aspidium imbricatum, Fourn. Mex. Pl. Enum. i. p. 96, saltem quoad var. *glabrescens*.
Polypodium imbricatum, Liebm. Mexicos Bregner, p. 58.

SOUTH MEXICO, Misantla (*Hahn*, 623); GUATEMALA, Choctum (*Godman & Salvin*).—WEST INDIES to PERU and the GALAPAGOS; also in the MALAY PENINSULA and ARCHIPELAGO. Hb. Kew.

The specimens recorded from Panama are from Western Colombia, further south.

4. **Nephrodium (Lastrea) caripense,** Hook. Sp. Fil. iv. p. 99; Hook. et Bak. Syn. Fil. p. 265.

Aspidium caripense, Mett. Pheg. und Aspid. p. 90; Fourn. Mex. Pl. Enum. i. p. 93.

South Mexico, Colipa (*Liebmann*); Guatemala, Coban (*Godman & Salvin*).—Southward to Peru and Brazil. Hb. Kew.

Fournier cites several other Mexican localities.

5. **Nephrodium chontalense,** Hemsl.

Aspidium chontalense, Fourn. in Bull. Soc. Bot. France, xix. p. 254.

Nicaragua, Chontales (*Lévy*, 516).

6. **Nephrodium (Sagenia) cicutarium,** Bak. in Hook. et Bak. Syn. Fil. p. 299.

Aspidium (*Sagenia*) *cicutarium,* Swartz; Hook. Sp. Fil. iv. p. 48.
Aspidium latifolium, Presl, Reliq. Hænk. i. p. 30; Fourn. Mex. Pl. Enum. i. p. 99.
Sagenia mexicana, Fée, 5e Mém. Foug. p. 313, teste Fourn.

South Mexico, Oaxaca 5000 feet (*Galeotti*, 6484), Trapiche de la Concepcion (*Liebmann*), Comaltepec (*Liebmann*); Guatemala, without locality (*Skinner; Godman & Salvin*); Nicaragua, Chontales (*Tate*, 37).—Southward to Peru and Brazil, and in Tropical Asia, Africa, and Polynesia. Hb. Kew.

7. **Nephrodium (Lastrea) concinnum,** Bak. in Hook. et Bak. Syn. Fil. p. 268.

Aspidium deltoideum, Fourn. loc. cit. p. 93.

South Mexico, Mirador (*Liebmann*), valley of Cordova (*Bourgeau*, 1644); Guatemala, Dueñas (*Godman & Salvin*).—Southward to Chili. Hb. Kew.

8. **Nephrodium (Lastrea) conterminum,** Desv.; Hook. Sp. Fil. iv. p. 91; Hook. et Bak. Syn. Fil. p. 268; Bak. in Journ. Bot. 1884, p. 363.

Aspidium exsudans, Fourn. Mex. Pl. Enum. i. p. 93, varietates *α. genuinum, β. majus, γ. feei,* et *δ. myriocarpum.*
Aspidium molliculum, Fourn. loc. cit. p. 94, cum var. *β. majus* et *γ. cheilanthoides.*
Aspidium oligocarpum, Mett. Pheg. und Aspid. p. 77, teste Fourn.
Polypodium tetragonum, Mart. et Gal. Foug. Mex. p. 43, non Swartz.
Phegopteris tetragona, Fée, et *P. pilosula,* Fée, 9e Mém. Foug. p. 22.
Polypodium litigiosum, Liebm. Mexicos Bregner, 53? ex Fourn.
Aspidium conterminum, Willd.; Fourn. Mex. Pl. Enum. i. p. 94; Eaton, Ferns N. Am. ii. p. 278.
Polypodium rivulorum, Kunze, Syn. Pl. Pœpp. p. 114, non Raddi ex Fourn. loc. cit.
Nephrodium panamense, Presl, Reliq. Hænk. p. 35.

Florida.—South Mexico, valley of Cordova (*Bourgeau*, 1442: *molliculum*), Mirador (*Liebmann: litigiosum*), Chiapas (*Ghiesbreght*, 200), region of Orizaba (*Bourgeau*, 2361: *exsudans, γ. feei*), cordillera of Vera Cruz 3000 feet (*Galeotti*, 6306: *exsudans, β. majus*), Mirador (*Liebmann: exsudans, α. genuinum*), Hacienda de Tuspango (*Bourgeau*, 2356: *exsudans, δ. myriocarpum*); Guatemala, Mazatenango (*Bernoulli*, 443), Vera Paz

(*Türkheim*); Costa Rica (*Harrison*); Panama, Chagres (*Fendler*, 416).—Southward to Chili, and in the Isle of Bourbon. Hb. Kew.

This fern is very common in South Mexico and Central America, and the above is only a selection of the numerous localities recorded, or represented in the Kew Herbarium, preference having been given to those illustrating forms that have been named either as distinct species or varieties.

Aspidium ghiesbreghti, Fourn. loc. cit., is almost certainly a variety of *N. conterminum*, for Fournier says of it: "Differt a precedente [*conterminum*] indusio latiore suborbiculari persistente."

9. **Nephrodium cumingianum,** J. Sm. in Seem. Bot. Voy. 'Herald,' p. 237, t. 50; Hook. Sp. Fil. iv. p. 63; Hook. et Bak. Syn. Fil. p. 287.

Aspidium (*Nephrodium*) *cumingianum*, Kunze, Farrnkr. p. 17, t. 9. fig. 2.

Panama, Coiba (*Seemann*, 646), Chagres (*Fendler*, 391); Panama or Colombia (*Cuming*, 1123). Hb. Kew.

10. **Nephrodium (Lastrea) denticulatum,** Hook. Sp. Fil. iv. p. 147; Hook. et Bak. Syn. Fil. p. 287.

Aspidium klotzschii, Hook. 2nd Cent. Ferns, t. 23.

Aspidium denticulatum, Swartz, Syn. Fil. p. 57; Mett. Pheg. und Aspid. n. 59; Fourn. Mex. Pl. Enum. i. p. 99.

Aspidium jucundum, Fée, 10e Mém. Foug. p. 41, t. 42. fig. 1.

Aspidium lætum, Swartz, Vetensk. Acad. Handel. 1817, p. 63, t. 4. fig. 3.

South Mexico, San Cristobal (*Bourgeau*, 3189), Chiapas, pine forests of San Bartolo (*Linden*, 1520; *Ghiesbreght*, 354); Guatemala, Chilasco (*Salvin & Godman*).—West Indies to South Brazil. Hb. Kew.

11. **Nephrodium (Lastrea) effusum,** Bak. in Hook. et Bak. Syn. Fil. p. 287, et in Journ. Bot. 1884, p. 363.

Polypodium (*Phegopteris*) *divergens*, Swartz; Hook. Sp. Fil. iv. p. 265.

Phegopteris divergens, Fée, et *P. effusa*, Fée, 9e Mém. Foug. p. 23; Fourn. Mex. Pl. Enum. i. p. 90.

Polypodium dilatatum, Liebm. Mexicos Bregner, p. 56; Hook. Sp. Fil. iv. p. 264.

South Mexico, Zacuapan (*Leibold*), Trapiche de la Concepcion (*Liebmann: dilatatum*), valley of Cordova (*Bourgeau*, 2012), around Mexico (*Schmitz*); Guatemala, Yzabal (*Godman & Salvin*); Costa Rica (*Harrison*).—Cuba to Peru and Brazil. Hb. Kew.

12. **Nephrodium (Lastrea) falciculatum,** Desv.; Hook. Sp. Fil. iv. p. 102; Hook. et Bak. Syn. Fil. p. 264.

South Mexico, Mirador (*Linden*, 70), cordillera of Vera Cruz 3500 feet (*Galeotti*, 6290); Nicaragua (*Tate*, 32).—Southward to Peru and Brazil. Hb. Kew.

13. **Nephrodium (Lastrea) filix-mas,** Rich.; Hook. Sp. Fil. iv. p. 116; Hook. et Bak. Syn. Fil. p. 272.

Aspidium filix-mas, Swartz; Eaton, Ferns N. Am. i. p. 311, t. 41.

Aspidium paleaceum, Don; Fourn. Mex. Pl. Enum. i. p. 92, cum var. β et γ.

Aspidium (*Nephrodium*) *parallelogrammum*, Kunze, Addit. Enum. Fil. Mex. in Linnæa, xiii. p. 146.
Lastrea parallelogramma, Liebm. Mexicos Bregner, p. 119.
Dichasium parallelogrammum, Fée, et *D. patentissimum*, Fée, Gen. Fil. p. 302, t. 23.
Aspidium crinitum, Mart. et Gal. Foug. Mex. p. 66, t. 17. fig. 2 (mala).
Aspidium pseudo-filix-mas, Fee, 8e Mém. Foug. p. 103.

Canada southward.—North Mexico, San Luis Potosi (*Virlet d'Aoust*); South Mexico, cordillera of Oaxaca 6000 to 7000 feet (*Galeotti*, 6348), Chinantla, Puebla 7000 feet (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 213); Guatemala, Volcan de Xetuch, near Quezaltenango (*Hartweg*, 570), Volcan de Fuego (*Godman & Salvin*).—Southward to Peru and Brazil, and very widely dispersed in Temperate Regions, though it does not reach either Australia or New Zealand. Hb. Kew.

The common form in Mexico is *paleaceum*, which, according to Eaton (loc. sup. cit.) does not occur either in the United States or Canada; yet it is common in Europe and some parts of Asia, and it is also found in the Hawaiian Islands. *Nephrodium filix-mas*, var. *paleaceum*, corresponds to the var. *parallelogrammum* of Hooker's 'Species Filicum.'

[*Aspidium flaccidum*, Fourn. (in Bull. Soc. Bot. France, xxvii. p. 327), from San Luis Potosi (*Schaffner*) we probably have at Kew under some other name.]

14. **Nephrodium (Lastrea) grisebachii,** Bak. in Hook. et Bak. Syn. Fil. p. 285.

Guatemala, Chilasco and Volcan de Fuego 7000 feet (*Godman & Salvin*).—Cuba. Hb. Kew.

15. **Nephrodium (Lastrea) guatemalense,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 498.

South Mexico, Chiapas &c. (*Ghiesbreght*); Guatemala, Choctum (*Godman & Salvin*). Hb. Kew.

16. **Nephrodium (Lastrea) karwinskyanum,** Bak. in Hook. et Bak. Syn. Fil. p. 279.

Aspidium karwinskyanum, Mett. Pheg. und Aspid. p. 59; Fourn. Mex. Pl. Enum. i. p. 98, et in Bull. Soc. Bot. France, xix. p. 255.
Lastrea mexicana, Liebm. Mexicos Bregner, p. 120, non Presl.

South Mexico, Comaltepec 2500 to 3000 feet (*Liebmann*); Guatemala, Motagua valley (*Godman & Salvin*); Nicaragua, Omotepe (*Lévy*, 1132). Hb. Kew.

17. **Nephrodium (Lastrea) lanceolatum,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 498.

Guatemala, Coban (*Godman & Salvin*). Hb. Kew.

18. **Nephrodium levyi,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 502.

Aspidium levyi, Fourn. in Bull. Soc. Bot. France, xix. p. 463, et in Bot. Zeit. 1873, p. 7.

Nicaragua, Chontales 2000 feet (*Lévy*, 463). Hb. Kew.

19. **Nephrodium (Lastrea) lindeni,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 493.

Aspidium lindeni, Kuhn in Linnæa, xxxvi. p. 116.
Polypodium subincisum, Mart. et Gal. Foug. Mex. p. 43, non Willd.

South Mexico, Teapa, Tabasco (*Linden*, 1489). Hb. Kew.

We have followed Kuhn in citing *Polypodium subincisum*, Mart. et Gal., syn. *Phegopteris subincisa*, Fée, as a synonym; but Galeotti's 6290 in the Kew Herbarium is certainly not the same species, and is referred to *N. falciculatum*. Fournier retains *P. subincisum* as a distinct species, and places it next to *N. martinicense*, a variety of the wholly different *N. villosum*. Thus it would appear that more than one species was distributed under Galeotti's number 6290. Kuhn also records Guatemala (Godman and Salvin) for his *Aspidium lindeni*.

Aspidium lindeni, Fourn. (Mex. Pl. Enum. i. p. 97), is unknown to us. It is from the same locality, by the same collector, and the description agrees very well with Kuhn's *A. lindeni*, except as to the indusium and venation.

20. **Nephrodium (Sagenia) macrophyllum,** Bak. in Hook. et Bak. Syn. Fil. p. 300.

Aspidium macrophyllum, Swartz; Hook. Sp. Fil. iv. p. 55; Liebm. Mexicos Bregner, p. 125.
Cardiochlæna macrophylla, Fée, Gen. Fil. t. 24 B.
Bathmium macrophyllum, Link, Fil. Sp. p. 114; Fourn. Mex. Pl. Enum. i. p. 99.
Aspidium pœppigii, Presl, Epim. p. 62?
Bathmium pœppigii, Fourn. in Bull. Soc. Bot. France, xix. p. 256?

South Mexico, Oaxaca 2000 feet (*Galeotti*, 6475; *Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 407), Chiapas &c. (*Ghiesbreght*, 431); Guatemala, Choctum (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*, 1437); Panama, Coiba (*Seemann*), Chagres (*Fendler*, 407), Empire Station (*S. Hayes*, 255).—Cuba to Peru and Brazil. Hb. Kew.

21. **Nephrodium molle,** Desv.; Hook. Sp. Fil. iv. p. 67, partim; Hook. et Bak. Syn. Fil. p. 293; Liebm. Mexicos Bregner, p. 123.

Aspidium molle, Swartz; Kunze in Linnæa, xiii. p. 146; Mett. Pheg. und Aspid. p. 103; Fourn. Mex. Pl. Enum. i. p. 96.
Aspidium violascens, Link, Sp. Fil. p. 101; Fourn. loc. cit. (species).

South Mexico, Teapa, Tabasco (*Linden*, 1505), region of Orizaba and Cordova (*Bourgeau*, 2363, 2367); Nicaragua, Realejo (*Sinclair*); Panama, Bojio (*S. Hayes*, 387).—Generally diffused in warm countries. Hb. Kew.

22. **Nephrodium pallidum,** Hemsl.

Aspidium pallidum, Fourn. Mex. Pl. Enum. i. p. 96.

South Mexico, region of Orizaba (*Bourgeau*, 2779 bis), Cordova (*Bourgeau*, 1643).

23. **Nephrodium (Lastrea) patens,** Desv.; Hook. Sp. Fil. iv. p. 95; Hook. et Bak. Syn. Fil. p. 262; Fourn. Mex. Pl. Enum. i. p. 95.

Aspidium patens, Swartz; Eaton, Ferns N. Am. ii. p. 182, t. 70, et in Proc. Am. Acad. xviii. p. 188.
Lastrea patens, Presl, Tent. Pterid. p. 75; Liebm. Mexicos Bregner, p. 119.
Aspidium abruptum, Mart. et Gal. Foug. Mex. p. 65, non Kunze, ex Fourn.
Lastrea abrupta, Liebm. loc. cit. p. 122, non Presl.
Phegopteris rudis, Fourn. Mex. Pl. Enum. i. p. 89, partim non Mett. Fil. Hort. Lips. p. 83.
Aspidium lugubre, Fourn. loc. cit. an Mett. ?
Aspidium conspersoides, Fée, et *A. geropogon,* Fée; Fourn. loc. cit. p. 95 (species propriæ).
Aspidium macrourum, Fourn. loc. cit., pro parte.
Aspidium albicaule, Fée, 8e Mém. Foug. p. 102; Fourn. loc. cit. p. 94.

South Carolina to Florida, Texas, and California.—North Mexico, San Miguelito Mountains (*Schaffner*, 965); South Mexico, very common (*Bourgeau*, 1442, 1643: *lugubre*, Fourn., 1319; *geropogon*, Fourn., 2355; *rudis*, Fourn., 2367, 2779; *macrourum*, Fourn.; *Linden*, 1526, 1529; *Ghiesbreght*, 372); Guatemala (*Salvin & Godman*); Nicaragua (*Sinclair*).—Southward to Chili, and widely spread in warm parts of the Old World. Hb. Kew.

24. **Nephrodium (Lastrea) patulum,** Bak. in Hook. et Bak. Syn. Fil. p. 276.
Nephrodium (Lastrea) mexicanum, Hook. Sp. Fil. iv. p. 138, t. 267.
Aspidium mexicanum, Kunze in Linnæa, xiii. p. 147; Fourn. in Bull. Soc. Bot. France, xix. p. 225, et Mex. Pl. Enum. i. p. 97, var. *α. obtusilobum* et var. *β. acutilobum.*
Aspidium paupertinum, Rœm. ex Kunze in Linnæa, xviii. p. 345.
Aspidium leptorrhachis, Kunze in Linnæa, xviii. p. 346.
Aspidium roseum, Fourn., et *A. indecorum,* Fourn. loc. cit. ?
Lastrea indecora, Liebm. ?, *L. leptorrhachis,* Liebm., et *L. paupertina,* Liebm. Mexicos Bregner, pp. 119 et 120.
Aspidium apertum, Fée, et *A. inquinans,* Fée ?
Polystichum cystopteroides, Nees in Linnæa, xix. p. 685, teste Kuhn, ex Fourn.

North Mexico, Cerro de Pinal (*Seemann*, 1449); South Mexico, Mirador (*Liebmann*), Chiapas &c. (*Ghiesbreght*), region of Orizaba (*Bourgeau*, 2148, 2360 bis); Guatemala, Alotenango and Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 134), Omotepe (*Lévy*, 207); Costa Rica (*Harrison*); Panama, Empire Station (*S. Hayes*, 377).—West Indies to Brazil and Ecuador. Hb. Kew.

25. **Nephrodium (Lastrea) puberulum,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 495.
Aspidium puberulum, Fée, 10e Mém. Foug. p. 40; Fourn. Mex. Pl. Enum. i. p. 95.

South Mexico, region of Orizaba and Cuernavaca (*Bourgeau*, 2361, 1318, 1320), Huatusco (*Schaffner*). Hb. Kew.

26. **Nephrodium (Lastrea) rigidum,** Desv.; Hook. Sp. Fil. iv. p. 20; Hook. et Bak. Syn. Fil. p. 275.
Aspidium rigidum, var. *argutum,* Eaton, Ferns N. Am. ii. p. 1, t. 46.

Oregon to California.—North Mexico, Sierra Madre (*Seemann*); South Mexico, valley of Mexico (*Schmitz*).—Europe; Asia Minor. Hb. Kew.

27. **Nephrodium (Lastrea) salvinii,** Bak. in Hook. et Bak. Syn. Fil. p. 274.
GUATEMALA, Choctum (*Godman & Salvin*). Hb. Kew.

28. **Nephrodium (Lastrea) sanctum,** Bak. in Hook. et Bak. Syn. Fil. p. 267.
GUATEMALA, Alotenango (*Godman & Salvin*).—WEST INDIES; Andes of ECUADOR. Hb. Kew.

29. **Nephrodium skinneri,** Hook. Sp. Fil. iv. p. 64, et 2nd Cent. Ferns, t. 25; Hook. et Bak. Syn. Fil. p. 287.
Aspidium francoanum, Fourn. in Bull. Soc. Bot. France, xix. p. 255, et in Bot. Zeit. 1873, p. 6.
GUATEMALA, without locality (*Skinner*); NICARAGUA, Chontales 2000 feet (*Lévy*, 506). Hb. Kew.

30. **Nephrodium (Lastrea) sloanei,** Bak. in Hook. et Bak. Syn. Fil. p. 263.
Aspidium macrourum, Fourn. Mex. Pl. Enum. i. p. 95, pro parte, vix Kaulf.
Lastrea macroura, Liebm. Mexicos Bregner, p. 119.
Nephrodium macrourum, et *N. serra,* Hook. Sp. Fil. iv. pp. 96–98.
Nephrodium conspersum, Schrad., teste Fourn.
SOUTH MEXICO, Santa Maria, Tlapacoya (*Liebmann*); PANAMA, Boquete, Veraguas (*Seemann*, 1552).—CUBA to PERU and BRAZIL. Hb. Kew.

31. **Nephrodium (Lastrea) sphærocarpum,** Hook. Sp. Fil. iv. p. 139; Hook. et Bak. Syn. Fil. p. 277.
Athyrium sphærocarpon, Fée, 5e Mém. Foug. p. 186; Fourn. Mex. Pl. Enum. i. p. 101.
Aspidium athyrioides, Mart. et Gal. Foug. Mex. p. 67, t. 18.
Lastrea athyrioides, Liebm. Mexicos Bregner, p. 122.
Aspidium agatholepis, Fée, 8e Mém. Foug. p. 106; Fourn. loc. cit. p. 97.
SOUTH MEXICO, Real del Monte, 8000 feet (*Galeotti*, 6425; *Coulter*, 1699, 1710), Itzhuatlancillo (*Bourgeau*, 2608), Barranca de Sante Fé (*Bourgeau*, 1164). Hb. Kew.

32. **Nephrodium (Lastrea) sprengelii,** Hook. Sp. Fil. iv. p. 94; Hook. et Bak. Syn. Fil. p. 258.
Aspidium sprengelii, Kaulf. in Flora, 1823, p. 365; Mett. Pheg. und Aspid. p. 81; Fourn. Mex. Pl. Enum. i. p. 94, et in Bull. Soc. Bot. France, xix. p. 254.
SOUTH MEXICO, Teapa, Tabasco (*Linden*, 494); GUATEMALA (*Skinner*); NICARAGUA, Chontales (*Lévy*, 513; *Tate*, 33); PANAMA, Gorgona (*S. Hayes*, 388).—WEST INDIES. Hb. Kew.

33. **Nephrodium stenophyllum,** Bak. in Journ. Bot. 1884, p. 363.
COSTA RICA, without locality (*Harrison*). Hb. Kew.

34. **Nephrodium (Lastrea) tetragonum,** Hook. Sp. Fil. iv. p. 103; Hook. et Bak. Syn. Fil. p. 266.
Aspidium tetragonum, Mett. Pheg. und Aspid. p. 95.
Aspidium schaffneri, Fourn. Mex. Pl. Enum. i. p. 96.
Nephrodium schaffneri, Fée, 8e Mém. Foug. p. 108, ex Fourn.

Aspidium imbricatum, Fourn. loc. cit. ?, excl. var. *glabrescens*.
Polypodium imbricatum, Liebm. Mexicos Bregner, p. 58?

South Mexico, Orizaba (*Müller*, 1846; *Botteri*), Azul (*Bourgeau*, 3156), Hacienda de Tuzpango (*Bourgeau*, 2352), Mirador (*Schaffner*); Guatemala, Choctum (*Godman & Salvin*).—Colombia to Peru and Brazil. Hb. Kew.

All the Mexican localities are taken from Fournier, and may possibly represent a different species.

Aspidium kunzei, Fée, 10e Mém. p. 37, t. 41. fig. 1, appears to be very closely allied to *A. tetragonum*, if not the same; and *A. vanheurckii*, Fourn. Mex. Pl. Enum. i. p. 97, is said to differ from the former in having a villous indusium.

35. **Nephrodium (Lastrea) trianæ,** Bak. in Hook. et Bak. Syn. Fil. p. 286.

Aspidium trianæ, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 325; Fourn. Mex. Pl. Enum. i. p. 98.
Aspidium expansum, Fée, et *A. extensum*, Fée, teste Fourn.

South Mexico, Orizaba (*Botteri; Schaffner*), eastern Cordillera (*Galeotti*, 6457), valley of Cordova (*Bourgeau*, 2010).—Colombia.

36. **Nephrodium (Lastrea) tricholepis,** Baker, n. sp.

"*N.* caudice erecto, stipite producto gracili paleis linearibus acuminatis brunneis squarrosis vestito; frondibus oblongo-lanceolatis parvis bipinnatis membranaceis pubescentibus, pinnis sessilibus lanceolatis infimis haud reductis, pinnulis oblique oblongis adnatis integris vel parce dentatis; venis pinnularum furcatis; soris medialibus superficialibus, involucro glabro subpersistente. "Stipites 2–2½ poll. longi; lamina 3–4 poll. longa, 15–18 lineas lata; pinnæ inferiores 8–9 lineas longæ, 4 lineas latæ, pinnulis 4–5-jugis.
"Ad formas minores *N. patuli* magis accedit; recedit stipitibus rhachibusque paleis squarrosis atro-brunneis copiosis præditis."—*Baker, MSS.*

Guatemala, mountains of Vera Paz (*Salvin*), Coban (*Godman & Salvin*). Hb. Kew.

37. **Nephrodium (Lastrea) triste,** Hook. Sp. Fil. iv. p. 104; Hook. et Bak. Syn. Fil. p. 266.

Nicaragua, Chontales (*Tate*, 395).—Colombia to Peru and Brazil. Hb. Kew.

38. **Nephrodium unitum,** R. Br.; Hook. et Bak. Syn. Fil. p. 289; Eaton, Ferns N. Am. i. p. 93, t. 13 (var. *glabrum*).

Aspidium gongylodes, Schkuhr, Fil. p. 193, t. 33; Mett. Pheg. und Aspid. p. 101; Fourn. Mex. Pl. Enum. i. p. 96.
Nephrodium paludosum, Liebm. Mexicos Bregner, p. 123, ex Fourn.
Nephrodium propinquum, R. Br.; Hook. Sp. Fil. iv. p. 79.

Florida.—South Mexico, San Antonio, Huatusco (*Liebmann*); Guatemala, without locality (*Godman & Salvin*).—Widely spread in the Tropics, and extending in south temperate regions to New Zealand. Hb. Kew.

39. **Nephrodium (Lastrea) villosum,** Presl; Hook. Sp. Pl. iv. p. 134, t. 264; Hook. et Bak. Syn. Fil. p. 286.

Phegopteris martinicensis, Fourn. Mex. Pl. Enum. i. p. 90.
Polypodium alsophiloides, Liebm. Mexicos Bregner, p. 56?
Phegopteris spectabilis, Fée, Gen. Fil. p. 243; Fourn. Mex. Pl. Enum. p. 90 (species propria).

South Mexico, valley of Cordova (*Bourgeau*, 2277), Chiapas &c. (*Ghiesbreght*, 365); Guatemala, Coban and Choctum (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 35: *spectabile*).—West Indies to Chili. Hb. Kew.

Species Mexicanæ dubiæ vel non visæ.

Aspidium augescens, Link; Fourn. Mex. Pl. Enum. i. p. 95.

Aspidium microcarpon, Fée=*A. microchlæna,* Fée; Fourn. loc. cit. p. 93.

Aspidium nemophilum, Kunze; Fourn. loc. cit. p. 98.

Aspidium obtusilobum, Fée, et **Aspidium orizabæ,** Fée; Fourn. loc. cit. pp. 93 et 95.

29. NEPHROLEPIS.

Nephrolepis, Schott; Hook. et Bak. Syn. Fil. p. 300, t. 5. fig. 45.

As limited in the 'Synopsis Filicum' this comprises seven species, generally spread in warm countries.

1. **Nephrolepis acuta,** Presl; Hook. Sp. Fil. iv. p. 153; Hook. et Bak. Syn. Fil. p. 301.
Nephrolepis acuminata, Presl; Liebm. Mexicos Bregner, pp. 117 et 119; Fourn. Mex. Pl. Enum. i. p. 130.
Nephrolepis punctulata, Presl; Fourn. loc. cit. (species).

South Mexico, San Pedro Tepinapa (*Liebmann*); Guatemala, Yzabal (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*, 1503); Panama, Chagres (*Fendler*, 420), Empire Station (*S. Hayes*, 258).—Cuba to Peru and Brazil; Africa, Mascarene Islands, China, Polynesia, and Eastern Australia. Hb. Kew.

2. **Nephrolepis cordifolia,** Presl; Hook. et Bak. Syn. Fil. p. 300; Bak. in Journ. Bot. 1884, p. 363.
Nephrolepis tuberosa, Presl; Hook. Sp. Fil. iv. p. 151; Mart. et Gal. Foug. Mex. p. 65.
Nephrolepis occidentalis, Kunze in Linnæa, xviii. p. 343; Fourn. Mex. Pl. Enum. i. p. 130.
Nephrolepis intermedia, Fée, teste Fourn.
Nephrolepis pectinata, (*Aspidium pectinatum,* Swartz) Fourn. loc. cit. p. 131.

South Mexico, region of Orizaba (*Bourgeau*, 3066), Vera Cruz to Orizaba (*Müller*), valley of Cordova (*Bourgeau*, 1938: *pectinata*), Teotalcingo, Oaxaca (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 294, 309), Teapa, Tabasco (*Linden*, 1490); Guatemala, Coban (*Godman & Salvin*), Chilion, near Mazatenango (*Bernoulli*, 386); Costa Rica (*Harrison*).—Cuba to Brazil and Peru; also having a wide range in the Tropics of the Old World. Hb. Kew.

3. **Nephrolepis exaltata,** Schott; Hook. Sp. Fil. iv. p. 152; Hook. et Bak. Syn. Fil. p. 301; Fourn. Mex. Pl. Enum. i. p. 130; Eaton, Ferns N. Am. ii. p. 129, t. 63. figg. 1–4.

Nephrodium exaltatum, H. B. K. Nov. Gen. et Sp. i. p. 21.
Aspidium exaltatum, Schkuhr, Krypt. Gewäch. t. 32.
Nephrolepis volubilis, J. Sm., teste Hook. et Bak.
Nephrolepis neglecta, Kunze in Linnæa, xiii. p. 148; Fée, 9e Mém. Foug.

Florida.—Hacienda de la Laguna (*Schiede*), Hacienda de Jovo (*Liebmann : neglecta*); Guatemala, Mazatenango (*Bernoulli & Cario*, 374: *volubilis*); Nicaragua, Chontales (*Lévy*, 485); Panama, Chagres (*Fendler*, 418), Barbacoas (*S. Hayes*, 171).—Bahamas to Peru, and widely spread in the Tropics of the Old World. Hb. Kew.

Fournier (Bull. Soc. Bot. France, xix. p. 260) refers Levy's 485 to *N. pendula*, Fée, a synonym of *N. exaltata*.

30. OLEANDRA.

Oleandra, Cav.; Hook. et Bak. Syn. Fil. p. 302, t. 5. fig. 46.

Six species, widely spread in the Tropics.

1. **Oleandra nodosa,** Presl; Hook. Sp. Fil. iv. p. 127; Hook. et Bak. Syn. Fil. p. 303.

Guatemala, Yzabal (*Bernoulli*, 871; *Godman & Salvin*).—West Indies, common; Guiana; Brazil. Hb. Kew.

Barter and Mann's West-African specimens, referred to this species in 'Species Filicum,' are the *O. articulata*, β. *welwitschii*, Baker, of the 'Synopsis Filicum.'

Tribe XI. POLYPODIEÆ.

Limited to the genus *Polypodium*.

31. POLYPODIUM.

Polypodium, Linn.; Hook. et Bak. Syn. Fil. p. 304, et ed. 2, p. 504, t. 5. fig. 48.

As defined in the 'Synopsis Filicum' this is by far the largest genus of the Order, numbering at least 450 species, spread nearly a l over the world.

1. **Polypodium (Goniophlebium) adnatum,** Kunze in Linnæa, xx. p. 395; Hook. Sp. Fil. v. p. 27; Hook. et Bak. Syn. Fil. p. 345.

Panama, Aspinwall (*S. Hayes*, 153).—West Indies; Colombia; Venezuela; Guiana. Hb. Kew.

This is recorded from Guatemala both in the 'Species Filicum' and the 'Synopsis Filicum;' but the specimens have probably been removed to another species in the Kew Herbarium, for we failed to find any under this.

2. **Polypodium (Phegopteris) alleopterum,** Kunze; Mett. Pheg. et Aspid. p. 19; Hook. et Bak. Syn. Fil. p. 305; Fourn. Mex. Pl. Enum. i. p. 89.

South Mexico, Santa Rita, near Misantla (*Hahn*, 352).—Colombia; Brazil.

3. **Polypodium (Campyloneuron) angustifolium,** Swartz; Hook. Sp. Fil. v. p. 40; Hook. et Bak. Syn. Fil. p. 347; Liebm. Mexicos Bregner, p. 36; Mart. et Gal. Foug. Mex. 29.

Campyloneuron dimorphum, Fourn. Mex. Pl. Enum. i. p. 84, varietates α et β.
Marginaria dimorpha, Link, Fil. Sp. 119.
Polypodium dimorphum, Link, Hort. Berol. ii. p. 88.
Polypodium tæniosum, H. B. K. Nov. Gen. et Sp. i. p. 7; Willd. Sp. Pl. v. p. 155; Ch. et Schl. in Linnæa, v. p. 606.
Campyloneuron tæniosum, Fée, 8e Mém. Fil. p. 129.
Cyrtophlebium angustifolium, J. Sm. ex Hook.
Polypodium amphostemon, Kunze, ex Hook.

South Mexico, Chiapas &c. (*Ghiesbreght*, 201, 259), San Pedro, Tepinapa, and Chinantla (*Liebmann*), region of Orizaba, and valley of Cordova (*Bourgeau*, 2890, 1453), around Mexico (*Schmitz*), cordillera of Vera Cruz (*Galeotti*, 6283, 6408), Sierra San Pedro Nolasco &c. (*Jurgensen*, 639); Guatemala, Coban (*Godman & Salvin*), Volcan de Fuego and Choctum (*Godman & Salvin: amphostemon*); Nicaragua, Chontales (*Lévy*, 1476); Panama, Coiba (*Seemann*).—Cuba to Peru and Brazil. Hb. Kew.

4. **Polypodium (Phymatodes) angustum,** Mett. Polyp. p. 90; Hook. Sp. Fil. v. p. 76; Hook. et Bak. Syn. Fil. p. 362.

Pleopeltis angustum, H. B. K. Nov. Gen. et Sp. i. p. 9, t. 1.
Pteropsis angustifolia, Fourn. Mex. Pl. Enum. i. p. 86, non Desv.
Tænitis angustifolia, Spreng. Syst. Veg. iv. p. 42; Kunze in Linnæa, xviii. p. 323, teste Fourn. sed errore.
Drynaria angusta, Fée, *D. torulosa,* Fée, et *D. stenoloma,* Fée, 8 Mém. Foug. p. 27, et 6e Mém. p. 18, t. 5.

South Mexico, region of Orizaba (*Bourgeau*, 2370), Chiapas &c. (*Ghiesbreght*, 280), Oaxaca (*Galeotti*, 6368, 6532), around Mexico (*Schmitz; Schaffner*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 638); Guatemala, without locality (*Skinner*), Dueñas (*Godman & Salvin*), Volcan de Fuego 6500 feet (*Salvin*).—West Indies to South Brazil. Hb. Kew.

[*Pleuridium angustum*, Fée, 8e Mém. Foug. p. 98, et 10e Mém. t. 39. fig. 3; Fourn. Mex. Pl. Enum. i. p. 86, to which Fournier refers Galeotti's 6403, is unknown to us.]

5. **Polypodium arthropodium,** Fée, 8e Mém. Foug. p. 88, et 9e Mém. p. 22; Fourn. Mex. Pl. Enum. i. p. 77.

South Mexico, region of Orizaba (*Bourgeau*, without number; *Müller*, 1484; *Schaffner*), Cordova and Huatusco (*Schaffner*).

This name is not taken up either by Hooker or Mettenius; but the plant referred

to it by Fournier will certainly be represented in the Kew Herbarium under some other name.

6. **Polypodium (Goniophlebium) attenuatum,** H. B. K. in Willd. Sp. Pl. v. p. 191, ex Kunze fide Fourn. Mex. Pl. Enum. i. p. 79, et in Bull. Soc. Bot. France, xix. p. 251, an Hook. et Bak. Syn. Fil. p. 345?

South Mexico, Cordova (*Bourgeau*, 1832 bis); Nicaragua (*Lévy*, 1477).—West Indies to Ecuador and Brazil.

There is no specimen of this in the Kew Herbarium from within our limits; but it is so closely allied to *P. neriifolium* that Grisebach unites the two. Indeed we suspected that Bourgeau's 1833 bis, placed in the cover of *neriifolium* at Kew, might be the plant Fournier had under observation; on looking at it again, however, we find that 1833 bis was named *neriifolium* by Fournier himself.

7. **Polypodium (Phlebodium) aureum,** Linn.; Hook. Sp. Fil. v. p. 16; Hook. et Bak. Syn. Fil. p. 347, cum varietatibus; Eaton, Ferns N. Am. i. p. 155, t. 16, et in Proc. Am. Acad. xviii. p. 183; Mart. et Gal. Foug. Mex. p. 31.

Chrysopteris microdictyon, Fée, *C. sporadocarpa,* Fée, *C. lanosa,* Fée, *C. glauca,* Fée, et *C. areolata,* Fée, 9e Mém. Foug. p. 27; Fourn. Mex. Pl. Enum. i. p. 86 (species propriæ).

Chrysopteris araneosa, Fée, et *C. trilobata,* Fée, loc. cit.

Polypodium araneosum, Mart. et Gal. Foug. Mex. p. 33, t. 5. fig. 2.

Drynaria araneosa, Fée, et *D. fulva,* Fée, 5e Mém. Foug. p. 270.

Polypodium sporadocarpum, Willd. Sp. Pl. v. p. 171; Mett. Fil. Hort. Lips. p. 36, t. 25. figg. 1 et 2, et Polyp. p. 100.

Polypodium areolatum, H. B. K. Nov. Gen. et Sp. i. p. 8; Liebm. Mexicos Bregner, p. 35.

Polypodium fulvum, Mart. et Gal., et *P. glaucinum,* Mart. et Gal. ?, Foug. Mex. pp. 32 et 33, t. 5. fig. 1, et t. 6.

Chrysopteris glaucina, Fourn. loc. cit.?

Polypodium pleurosorum, Kunze; Mett. Polyp. p. 101, t. 2. figg. 6, 7; Fourn. Mex. Pl. Enum. i. p. 80?

Florida.—North Mexico, mountains of San Rafael, San Luis Potosi (*Schaffner*, 942; *Parry & Palmer*, 972: *areolatum*); South Mexico, Pedregal (*Bourgeau*, 923: *lanosum*), valley of Cordova (*Bourgeau*, 1649: *areolatum*), Colipa (*Liebmann: areolatum*), Chiapas &c. (*Ghiesbreght: areolatum*), Oaxaca 5000 feet (*Galeotti*, 6460: *araneosum*), valley of Mexico (*Schmitz: araneosum*), cordillera of Vera Cruz 2000 to 4500 feet (*Galeotti*, 6413), Regla (*Hartweg*, 416), Chiapas (*Ghiesbreght*, 272: *trilobatum*), Montecinos, Vera Cruz (*Linden*, 192); Guatemala (*Skinner*); Nicaragua (*Lévy*); Costa Rica (*Harrison*).—Southward to Brazil. Hb. Kew.

8. **Polypodium bernoullii,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 510.

Guatemala, Mazatenango (*Bernoulli*, 442). Hb. Kew.

9. **Polypodium (Phegopteris) cæspitosum,** Bak. in Hook. et Bak. Syn. Fil. p. 305.

Phegopteris cæspitosa, Fourn. Mex. Pl. Enum. i. p. 89.

South Mexico, Cordova (*Bourgeau*, 2005), Chiapas &c. (*Ghiesbreght*, 428). Hb. Kew.

10. **Polypodium (Goniophlebium) chnoodes,** Spreng.; Hook. et Bak. Syn. Fil. p. 344.

Phegopteris dissimile, Hook. Sp. Fil. v. p. 25.

Nicaragua, Chontales (*Tate*, 53).—West Indies; Venezuela. Hb. Kew.

11. **Polypodium (Campyloneuron) coarctatum,** Kunze; Mett. Polyp. p. 84; Hook. et Bak. Syn. Fil. p. 348.

Campyloneuron coarctatum, Fourn. in Bull. Soc. Bot. France, xix. p. 252.

Nicaragua, Chontales (*Lévy*, 481).

There is no specimen in the Kew Herbarium of this species, which was founded on Peruvian specimens.

12. **Polypodium (Phymatodes) crassifolium,** Linn.; Hook. Sp. Fil. v. p. 62; Ch. et Schl. in Linnæa, v. p. 606; Mett. Polyp. p. 109.

Pleuridium crassifolium, Fée, Gen. Fil. p. 273; Fourn. Mex. Pl. Enum. i. p. 86.

Polypodium coriaceum, Raddi, Fil. Bras. p. 16, t. 25.

South Mexico, Antigua, Vera Cruz (*Liebmann*), Orizaba (*Bourgeau*, 3606), Hacienda de Jovo (*Liebmann*); Panama, Boquete, Veraguas (*Seemann*, 1549), Chagres (*Fendler*, 393).—West Indies to Peru and Brazil. Hb. Kew.

13. **Polypodium (Goniopteris) crenatum,** Swartz; Hook. Sp. Fil. v. p. 2; Hook. et Bak. Syn. Fil. p. 315.

Goniopteris crenata, Presl, Tent. Pterid. p. 163; Fourn. Mex. Pl. Enum. i. p. 88.

South Mexico, Huatusco (*Schaffner*); Guatemala, Choctum (*Godman & Salvin*); Panama, Chagres (*Fendler*, 408).—Cuba to Ecuador and Brazil. Hb. Kew.

[*Polypodium* (*Phymatodes*) *crispatum*, Hook. Sp. Fil. v. p. 1, is erroneously recorded from Panama, the Bay of Choco, the locality in question, being in southern Darien.]

14. **Polypodium cultratum,** Willd.; Hook. Sp. Fil. iv. p. 190; Hook. et Bak. Syn. Fil. p. 327.

South Mexico, Oaxaca 5000 feet (*Galeotti*, 6507), Sierra San Pedro Nolasco &c. (*Jurgensen*, 640); Guatemala, Chilasco (*Godman & Salvin*).—Cuba to Peru and Brazil, and in Tropical Africa and Madagascar. Hb. Kew.

15. **Polypodium (Phlebodium) decumanum,** Willd.; Hook. Sp. Fil. v. p. 17; A. Gr. in Proc. Am. Acad. v. p. 190.

Chrysopteris decumana, Fée, Gen. Fil. p. 265; Fourn. Mex. Pl. Enum. i. p. 85.

South Mexico, Wartenberg, Tantoyuca (*Ervendberg*, 15).—Jamaica to Peru and Brazil.

16. **Polypodium (Phegopteris) decussatum,** Linn.; Hook. Sp. Fil. iv. p. 243; Hook. et Bak. Syn. Fil. p. 307.

Gymnogramme microcarpa, Fée, 7^{e} Mém. Foug. p. 43, t. 20. fig. 5.

Nicaragua, Chontales (*Tate*, 43); Panama (*S. Hayes*).—West Indies to Peru and Brazil. Hb. Kew.

17. **Polypodium delicatulum,** Mart. et Gal. Foug. Mex. p. 35, t. 7. fig. 1; Hook. Sp. Fil. iv. p. 184; Hook. et Bak. Syn. Fil. p. 326; Fourn. Mex. Pl. Enum. i. p. 74.

Ctenopteris delicatula, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 339.

South Mexico, Sierra Yavezia 7000 feet (*Galeotti*, 6378), Azul (*Bourgeau*, 3155), Orizaba (*Schaffner*).—Colombia to Ecuador. Hb. Kew.

18. **Polypodium divaricatum,** Fourn. Mex. Pl. Enum. i. p. 80.

Polypodium pectinatum, Mart. et Gal., non Linn. ex Fourn.

South Mexico, eastern Cordillera (*Galeotti*, 6287).

Galeotti's number 6287 does not appear to be in the Kew Herbarium; but one or two of the other numbers cited by Martens and Galeotti under *P. pectinatum* certainly belong to that species.

19. **Polypodium (Goniopteris) eatoni,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 511.

South Mexico, Chiapas &c. (*Ghiesbreght*, 273). Hb. Kew.

20. **Polypodium echinolepis,** Fée, 8e Mém. Foug. p. 87; Fourn. Mex. Pl. Enum. i. p. 78.

North Mexico, San Rafael (*Guillemin*), Tenango near Orizaba (*Botteri*), Cordova (*Schaffner*).

21. **Polypodium elasticum,** Rich.; Hook. et Bak. Syn. Fil. p. 332; Bak. in Journ. Bot. 1884, p. 364; Fourn. Mex. Pl. Enum. i. p. 75.

Polypodium plumula, H. B. K.; Eaton, Ferns N. Am. ii. p. 136, t. 63. figg. 5–8; Fourn. loc. cit. p. 76; Hook. Sp. Fil. iv. p. 200, ex parte.

Polypodium pulchrum, Mart. et Gal. Foug. Mex. p. 41, t. 8. fig. 2; Fourn. loc. cit. (species propria).

Polypodium filicula, Liebm. Mexicos Bregner, p. 48, teste Fourn.

Polypodium flexile, Fée, 6e Mém. Foug. p. 9, t. 2. fig. 3.

Polypodium jubæforme, Ch. et Schl. in Linnæa, v. p. 607; Liebm. loc. cit. p. 45.

Polypodium schkuhrii, Raddi, Fil. Bras. p. 19, t. 27, non Fourn. loc. cit. p. 76.

Florida.—North Mexico, San Luis Potosi (*Virlet d'Aoust*), Sierra Madre (*Seemann*, 1936); South Mexico, Colipa and Mirador (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 262), Jalapa 4000 feet (*Galeotti*, 6332), Orizaba (*Bourgeau*, 2609 bis, 3064 bis); Nicaragua, Chontales (*Lévy*, 479), Omotepe (*Friedrichsthal*); Costa Rica (*Harrison*).—Southward to Peru and Brazil. Hb. Kew.

22. **Polypodium (Phegopteris) elongatum,** Fourn. Mex. Pl. Enum. i. p. 89.

Gymnogramme polypodioides, Liebm. Mexicos Bregner, p. 29, non Spreng., teste Fourn.

South Mexico, San Cristobal, near Orizaba (*Botteri*, 1442), Tlapacoyo (*Hahn*), eastern cordillera (*Linden*).

This is most likely in the Kew Herbarium under some other name. Fournier states that it is near *Phegopteris deflexa*, Mett. (in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 323), differing in its larger size and longer pinnules.

23. **Polypodium fallax,** Ch. et Schl. in Linnæa, v. p. 609; Kunze in Linnæa, xviii. p. 323; Hook. Sp. Fil. iv. p. 215; Hook. et Bak. Syn. Fil. p. 337.

South Mexico, region of Orizaba (*Bourgeau*, 2784; *Müller*, 382), Zacuapan (*Schmitz*), Santa Maria, Tlapacoyo (*Liebmann*), Jalapa 4000 feet (*Galeotti*, 6327), Chiapas &c. (*Ghiesbreght*, 447; *Linden*, 1549), Mirador (*Linden*, 27); Guatemala, Motagua valley (*Godman & Salvin*). Hb. Kew.

24. **Polypodium (Goniopteris) faucium,** Liebm. Mexicos Bregner, p. 57; Hook. et Bak. Syn. Fil. p. 315.

Goniopteris faucium, Fourn. Mex. Pl. Enum. i. p. 88.

South Mexico, Barranca de Jovo (*Liebmann*). Hb. Kew.

25. **Polypodium feei,** Fourn. Mex. Pl. Enum. i. p. 82.

Goniophlebium rhodopleurum, Fée, 9e Mém. Foug. p. 24, teste Fourn.

Polypodium virginianum, Mart. et Gal. Foug. Mex. p. 37; Liebm. Mexicos Bregner, p. 51, non Linn.

South Mexico, between Jalapa and Coatepec 3000 to 4500 feet, and at Llano Verde in the eastern cordillera of Oaxaca at 7000 feet (*Galeotti*, 6412).

26. **Polypodium (Phegopteris) flavopunctatum,** Kaulf.; Hook. Sp. Fil. iv. p. 239; Hook. et Bak. Syn. Fil. p. 304.

South Mexico, Barranca de Huitamalco (*Liebmann*).—West Indies to Peru and Brazil. Hb. Kew.

27. **Polypodium fraternum,** Ch. et Schl. in Linnæa, v. p. 608; Hook. et Bak. Syn. Fil. p. 337; Fourn. Mex. Pl. Enum. i. p. 79.

Polypodium sororium, Fée, 9e Mém. Foug. p. 22, teste Fourn.

Goniophlebium revertens, Fée, 8e Mém. p. 94.

South Mexico, region of Orizaba (*Bourgeau*, 2881, 3150), around Mexico (*Schmitz*), Chiapas &c. (*Ghiesbreght*, 205); Guatemala, without locality (*Skinner*). Hb. Kew.

28. **Polypodium (Goniophlebium) fraxinifolium,** Jacq. Ic. Pl. Rar. iii. t. 639; Hook. Sp. Fil. v. p. 26; Hook. et Bak. Syn. Fil. p. 346; Fourn. Mex. Pl. Enum. i. p. 79.

South Mexico, Orizaba (*Müller*, 48).—Colombia to Peru and Brazil, common. Hb. Kew.

29. **Polypodium friedrichsthalianum,** Kunze; Hook. Sp. Fil. iv. p. 217; Hook. et Bak. Syn. Fil. p. 339; Bak. in Journ. Bot. 1884, p. 364.

Polypodium lindenianum, Kunze, Farrnkr. Suppl. ii. p. 83, t. 134; Mett. Polyp. p. 657; Fourn. Mex. Pl. Enum. i. p. 83 (species propria).

Polypodium cancellatum, Fée, Gen. Fil. p. 242, et 6e Mém. Foug. p. 12, t. 7. fig. 2.

South Mexico, Chiapas &c. (*Ghiesbreght*, 257; *Linden*, 1528, 1540); Guatemala, Coban (*Godman & Salvin*; *Bernoulli & Cario*, 287), without locality (*Bernoulli*, 1025; *Türckheim*, 1); Nicaragua, Chontales (*Tate*, 50; *Seemann*, 201); Costa Rica (*Harrison*). Hb. Kew.

30. **Polypodium furfuraceum,** Ch. et Schl. in Linnæa, v. p. 607; Hook. Sp. iv. p. 213; Hook. et Bak. Syn. Fil. p. 332; Fourn. Mex. Pl. Enum. i. p. 83, cum varietatibus; Eaton in Proc. Am. Acad. xviii. p. 183.

Polypodium leucostichum, Kunze in Linnæa, xx. p. 380.
Polypodium karwinskyanum, Mett. Polyp. p. 66.
Polypodium nivosum, Fée, et *P. cryptocarpum,* Fée, 8e Mém. Foug. pp. 88 et 89, teste Fourn.

North Mexico, San Luis Potosi to Tampico (*Palmer*, 1155); South Mexico, valley of Cordova (*Bourgeau*, 1439, 1440), region of Orizaba (*Bourgeau*, 2539), Zacuapan (*Leibold*), Chiapas &c. (*Ghiesbreght*, 312). Hb. Kew.

31. **Polypodium galeottii,** Mett. ex Kuhn in Linnæa, xxvi. p. 135; Hook. et Bak. Syn. Fil. ed. 2, p. 509.

South Mexico, without locality (*Galeotti*, 6552). Hb. Kew.

32. **Polypodium (Goniopteris) ghiesbreghtii,** Linden; Hook. Fil. Exot. t. 84, non Swartz; Hook. et Bak. Syn. Fil. p. 315.

South Mexico, Tabasco (*Linden*, 1499). Hb. Kew.

33. **Polypodium (Phegopteris) glanduliferum,** Liebm. Mexicos Bregner, p. 54; Hook. Sp. Fil. iv. p. 252; Hook. et Bak. Syn. Fil. p. 310; Fourn. Mex. Pl. Enum. i. p. 90.

South Mexico, Comaltepec and Trapiche de la Concepcion, Oaxaca (*Liebmann*). Hb. Kew.

34. **Polypodium griseum,** Liebm. Mexicos Bregner, p. 46; Hook. Sp. Fil. iv. p. 202; Hook. et Bak. Syn. Fil. p. 330; Fourn. Mex. Pl. Enum. i. p. 77.

South Mexico, San Felipe (*Andrieux*), Chinantla, Puebla 7000 feet (*Liebmann*); Guatemala, without locality (*Skinner*). Hb. Kew.

35. **Polypodium (Goniophlebium) guatemalense,** Hook. Sp. Fil. iv. (1864), p. 29; Hook. et Bak. Syn. Fil. p. 345, non Klotzsch.

Polypodium inæquale, Lowe, Brit. and Exot. Ferns, ii. t. 28, non Link.

Guatemala, without locality (*Skinner*). Hb. Kew.

[*Polypodium* (*Goniophlebium*) *guatemalense*, Klotzsch (in Otto & Dietr. Allg. Garten-Zeitung, xxiii. 1855, p. 33), is a totally different species which we have not seen.]

36. **Polypodium guillemineanum,** Fourn. Mex. Pl. Enum. i. p. 77, t. 2; Hook. et Bak. Syn. Fil. ed. 2, p. 510.

North Mexico, San Rafael (*Guillemin*).

37. **Polypodium hahnii,** Fourn. Mex. Pl. Enum. i. p. 79.

South Mexico, Misantla (*Hahn*).

38. **Polypodium hartwegianum,** Hook. in Benth. Pl. Hartw. p. 55; Hook. Ic. Pl. t. 390, et Sp. Fil. iv. p. 207; Hook. et Bak. Syn. Fil. ed. 2, p. 336.

Polypodium ellipsoideum, Fée, 7e Mém. Foug. p. 57, t. 21. fig. 1; Hook. et Bak. Syn. Fil. ed. i. p. 333; Eaton in Proc. Am. Acad. xviii. p. 183.

Polypodium puberulum, Fourn. Mex. Pl. Enum. i. p. 76, non Ch. et Schl.

North Mexico, San Miguelito Mountains (*Schaffner*); South Mexico, Sumata 9500 feet (*Hartweg*, 415), Popocatepetl (*Schaffner*), Chiapas &c. (*Ghiesbreght*, 208). Hb. Kew.

39. **Polypodium (Phegopteris) hemsleyanum,** Baker, n. sp. (Tab. CVIII.)

"*P.* caudice erecto lignoso, stipitibus elongatis paleis minutis linearibus nigro-castaneis ascendentibus præditis; frondibus deltoideis bipinnatis membranaceis glabris, rhachibus paleis copiosis patulis præditis, pinnis basalibus maximis inæquilateralibus postice productis, pinnis centralibus lanceolatis simpliciter pinnatis, segmentis ultimis oblongis integris vel crenatis, venis segmentorum pinnatis, venulis simplicibus erecto-patentibus 6–8-jugis; soris globosis superficialibus medialibus.

"Stipites 8–9-pollicares; lamina semipedalia basi 4½–5 poll. lata; pinnarum infimarum pinnulæ inferiores 6–9 lineas longæ; pinnæ centrales 21–24 lineas longæ, segmentis ultimis ¾–1 lineam latis."—*Baker MSS.*

Guatemala, Chilasco (*Godman & Salvin*). Hb. Kew.

40. **Polypodium heteromorphum,** Hook. et Grev. Ic. Fil. t. 108; Hook. Sp. Fil. iv. p. 229; Hook. et Bak. Syn. Fil. p. 334; Fourn. Mex. Pl. Enum. i. p. 75; Liebm. Mexicos Bregner, p. 43; Mart. et Gal. Foug. Mex. p. 41.

South Mexico, forest of the Desierto Viejo (*Bourgeau*, 913), Mexico (*Schaffner*), Toluca (*Andrieux*, 46), peak of Orizaba 10,000 to 12,000 feet (*Liebmann; Linden*, 51; *Galeotti*, 6261); Guatemala, Volcan de Agua (*Godman & Salvin*).—Colombia to Ecuador. Hb. Kew.

41. **Polypodium (Goniopteris) heterophlebium,** Bak. in Journ. Bot. 1884, p. 363.

Costa Rica, without locality (*Harrison*). Hb. Kew.

42. **Polypodium (Phegopteris) hydrophila,** Fée, Hist. Foug. Antilles, p. 56, t. 13. fig. 3; Fourn. Mex. Pl. Enum. i. p. 89.

North Mexico, San Luis Potosi (*Virlet d'Aoust*).—Guadaloupe.

43. **Polypodium (Goniophlebium) incanum,** Swartz; Hook. Sp. Fil. iv. p. 208; Hook. et Bak. Syn. Fil. p. 346; Fourn. Mex. Pl. Enum. i. p. 83; Mart. et Gal. Foug. Mex. p. 35; Eaton, Ferns N. Am. i. p. 197, t. 26. fig. 2, et in Proc. Am. Acad. xviii. p. 183.

Lepicystis incana, J. Sm. in Hook. Lond. Journ. Bot. i. p. 195.

Ohio, Illinois, and Indiana southward to Florida and Texas.—North Mexico,

Caracol Mountains, Coahuila, and at Guajuco (*Palmer*, 1376); South Mexico, region of Orizaba (*Bilimek; Müller*, 30; *Bourgeau*, 3274), Yavezia, Guadalaxara, and cordillera of Vera Cruz (*Galeotti*, 6309, 6423, 6438), Jalapa (*Coulter*, 1706); Nicaragua, Omotepe (*Lévy*, 1153); Panama, Hacienda de Santa Rita (*Seemann*, 24).—Bahamas to Chili and Uruguay; also in Tropical and South Africa. Hb. Kew.

44. **Polypodium jubæforme,** Kaulf.; Hook. Sp. Fil. iv. p. 186; Hook. et Bak. Syn. Fil. p. 327.

Panama (ex Syn. Fil.)—West Indies; Guiana; Brazil. Common.

The Panama record seems to be incorrect, and probably originated from mistaking a specimen collected by Seemann, and labelled Straits of Juan de Fuca. If this locality be correct it is far north of any other known station for this species. Eaton does not include it in his 'Ferns of North America.'

45. **Polypodium jungermannoides,** Klotzsch in Linnæa, xx. p. 373; Hook. Sp. Fil. iv. p. 166; Hook. et Bak. Syn. Fil. p. 320.

Guatemala, Chilasco (*Godman & Salvin*).—Southward in the Andes to Chili. Hb. Kew.

46. **Polypodium kuhnii,** Fourn. Bull. Soc. Bot. France, xix. p. 251.

Nicaragua, Omotepe (*Lévy*, 1161).

47. **Polypodium (Campyloneuron) lævigatum,** Cav.; Hook. et Bak. Syn. Fil. p. 348; Bak. in Journ. Bot. 1884, p. 364, non *P. lævigatum*, Baker, Syn. ed. 2, p. 505.

Polypodium (*Campyloneuron*) *fasciale,* Willd.; Hook. Sp. Fil. v. p. 41.
Campyloneuron fasciale, Presl, Tent. Pterid. p. 190; Fourn. Mex. Pl. Enum. i. p. 85.
Polypodium fasciale, Mett. Polyp. p. 82.

South Mexico, Vera Cruz to Orizaba (*Müller*, 2227); Nicaragua (*Tate*, 57); Costa Rica (*Harrison*).—West Indies to Ecuador and Brazil. Hb. Kew.

48. **Polypodium (Phymatodes) lanceolatum,** Linn.; Hook. et Bak. Syn. Fil. p. 356; Fourn. Mex. Pl. Enum. i. p. 88; Eaton in Proc. Am. Acad. xviii. p. 184.

Polypodium (*Phymatodes*) *lepidotum,* Willd.; Hook. Sp. Fil. v. p. 56.
Grammitis elongata, Mart. et Gal. Foug. Mex. p. 28.
Pleopeltis crassinervata, Fourn. loc. cit.
Drynaria crassinervata, Fée, et *D. mexicana,* Fée, 8e Mém. Foug. p. 97, et 9e Mém. p. 26.
Pleopeltis lepidota, Presl, et *P. polylepis,* Fourn. loc. cit. p. 87 (species propriæ).
Drynaria lepidota, Fée, et *D. vestita,* Fée, Gen. Fil. pp. 270 et 271.
Polypodium polylepis, Rœm.; Mett. Polyp. p. 89; Liebm. Mexicos Bregner, p. 33.

North Mexico, Sierra Madre (*Seemann*, 1945), mountains of San Miguelito (*Schaffner*, 938; *Parry & Palmer*, 975); South Mexico, Santa Maria, Alpatlahua, and San Juan de Coscomatepec (*Liebmann*), cordilleras of Oaxaca and Vera Cruz (*Galeotti*, 6328, 6421, 6553), peak of Orizaba 9000 to 12,000 feet (*Galeotti*, 6264), Zacuapan (*Leibold*), near Mexico (*Schiede; Graham; Schaffner*), Chiapas (*Linden*, 1542; *Ghiesbreght*,

266); Guatemala, Yzabal and Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 403); Panama (*Seemann*, 20).—West Indies to Chili and Juan Fernandez; also in Tropical and South Africa, South India, Mascarene Islands, Sandwich Islands, and St. Helena; but not in Tristan da Cunha, as recorded in Hooker's 'Species Filicum.' Hb. Kew.

49. **Polypodium (Goniophlebium) lasiopus,** Klotzsch; Hook. Sp. Fil. v. p. 21; Hook. et Bak. Syn. Fil. p. 343; Fourn. Mex. Pl. Enum. i. p. 81.

South Mexico, Pedregal and Orizaba (*Bourgeau*, without number).—Cuba; Venezuela.

There are no specimens from within our limits referred to this species in the Kew Herbarium.

50. **Polypodium legionarium,** Bak. in Hook. et Bak. Syn. Fil. p. 337.

Polypodium macrodon, Hook. Sp. Fil. iv. p. 218, non Reinw.

South Mexico, around Mexico (*Schmitz*); Guatemala, Volcan de Fuego, Calderas, and Coban (*Godman & Salvin*). Hb. Kew.

51. **Polypodium (Goniophlebium) lepidopteris,** Kunze; Hook. Sp. Fil. iv. p. 211; Hook. et Bak. Syn. Fil. p. 346; Fourn. Mex. Pl. Enum. i. p. 84; Liebm. Mexicos Bregner, p. 37.

Acrostichum lepidopteris, Langsd. et Fisch. Voy. Russ. p. 5, t. 2.

Polypodium hirsutissimum, Raddi, Fil. Bras. p. 17, t. 26; Mart. et Gal. Foug. Mex. p. 41.

Polypodium sepultum, Kaulf. Enum. Fil. p. 194.

Goniophlebium pyrrholepis, Fée, 8e Mém. Foug. p. 94, et 9e Mém. p. 25, teste Fourn.

North Mexico, Sierra Madre (*Seemann*, 1933); South Mexico, Zacuapan (*Leibold*), cordilleras of Oaxaca and Vera Cruz 3500 to 5000 feet (*Galeotti*, 6276, 6308), Mirador (*Liebmann*), Jalapa (*Harris*), region of Orizaba and valley of Cordova (*Bourgeau*, 1446, 2282); Panama (*Seemann*).—Southward to Peru and Rio Janeiro, in the island of Trinidad, off the coast of Brazil, and in the Galapagos. Hb. Kew.

52. **Polypodium leptostomum,** Fée, 7e Mém. Foug. p. 58; Hook. Sp. Fil. iv. p. 183; Fourn. Mex. Pl. Enum. i. p. 75.

Polypodium suspensum, Mart. et Gal. Foug. Mex. p. 34, non Willd. teste Fourn.

South Mexico, region of Orizaba (*Müller*, 32; *Schaffner*), near Jalapa (*Hahn*), Villa Alta, Oaxaca (*Galeotti*, 6380); Guatemala.—Ecuador.

This species has not been identified at Kew.

53. **Polypodium longicaudatum,** Liebm. Mexicos Bregner, p. 57; Fourn. Mex. Pl. Enum. i. p. 78.

South Mexico, Barranca de Huitamalco (*Liebmann*).

An obscure species which has not been identified at Kew.

54. **Polypodium longepinnulatum,** Fourn. Mex. Pl. Enum. i. p. 77; Hook. et Bak. Syn. Fil. ed. 2, p. 510.

South Mexico, Oaxaca (*Galeotti*, 6510).

55. **Polypodium (Goniophlebium) loriceum,** Linn.; Hook. Sp. Fil. v. p. 20, pro parte; Hook. et Bak. Syn. Fil. p. 343; Bak. in Journ. Bot. 1884, p. 364.

Polypodium falcaria, Kunze in Linnæa, xviii. p. 316; Fourn. in Bull. Soc. Bot. France, xxii. p. 171, et Mex. Pl. Enum. i. p. 80 (species propria).

Polypodium lætum, Raddi, Fil. Bras. p. 19, t. 28.

Goniophlebium calaguala, Fée, et *G. invertens,* Fée, teste Fourn.

Polypodium isomerum, Fourn. Mex. Pl. Enum. i. p. 80, t. 3 (species propria).

North Mexico, Tetela del Oro, Sierra Madre (*Rascon*); South Mexico, Zacuapan (*Liebold*), Jalapa (*Harris*), Oaxaca (*Galeotti*, 6549, 6550), Mirador (*Liebmann*), San Cristobal (*Bourgeau*, 3187: *falcaria*), Chiapas &c. (*Ghiesbreght*, 246 *a*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 673); Nicaragua, Chontales (*Lévy*, 478; *Seemann*, 196); Costa Rica (*Harrison*); Panama (*Seemann*, 14), Chagres (*Fendler*, 422).—West Indies to Brazil and Chili. Hb. Kew.

56. **Polypodium (Phymatodes) lycopodioides,** Linn.; Hook. Sp. Fil. v. p. 34; Hook. et Bak. Syn. Fil. p. 357; Kunze in Linnæa, xviii. p. 311; Liebm. Mexicos Bregner, p. 34.

Pleopeltis lycopodioides, Presl, Tent. Pterid. p. 193; Fourn. Mex. Pl. Enum. i. p. 87.

Pleopeltis squamulosa, Presl, loc. cit. et Fourn. loc. cit. (species propria).

Drynaria lycopodioides, Fée, 9 Mém. Foug. p. 36.

South Mexico, Colipa (*Liebmann*); Guatemala, Yzabal and Choctum (*Godman & Salvin*), without locality (*Skinner*); Panama, Chagres (*Fendler*, 395).—Cuba to Peru and South Brazil; also in the Sandwich Islands, Java, and Tropical Africa. Hb. Kew.

57. **Polypodium macrocarpum,** Presl, Reliq. Hænk. i. p. 23, t. 1; Hook. Sp. Fil. iv. p. 215; Hook. et Bak. Syn. Fil. p. 330; Fourn. Mex. Pl. Enum. i. p. 83; Kunze in Linnæa, xiii. p. 132; Nees in Linnæa, xix. p. 683.

South Mexico, mountain near Jalapa (*de Buren*), without locality (*Aschenborn*).—Bolivia to Chili.

There are no Mexican specimens referred to this species in the Kew Herbarium.

58. **Polypodium (Grammitis) marginellum,** Swartz; Hook. Sp. Fil. iv. p. 164; Hook. et Bak. Syn. Fil. p. 321.

Guatemala, without locality (*Godman & Salvin*).—West Indies to Guiana and Peru; also in the Cape Verd Islands, St. Helena, and Samoa. Hb. Kew.

59. **Polypodium martensii,** Mett. Polyp. p. 61; Hook. Sp. Fil. iv. p. 208; Hook. et Bak. Syn. Fil. p. 333; Eaton in Proc. Am. Acad. xviii. p. 183; Kuhn, Beitr. Mex. Farrnkr. p. 17.

Polypodium affine, Mart. et Gal. Foug. Mex. p. 37, t. 8. fig. 1, non Blume; Fourn. Mex. Pl. Enum. i. p. 77.

Polypodium otites, Mart. et Gal., et *P. puberulum,* Mart. et Gal. loc. cit. pp. 25 et 38 teste Fourn.

Polypodium callolepis, Fée, 8e Mém. Foug. p. 86; Fourn. loc. cit. (species propria).

Polypodium ehrenbergianum, Klotzsch in Linnæa, xx. p. 381?

Polypodium olivaceum, Liebm. Mexicos Bregner, p. 47?

North Mexico, San Luis Potosi (*Parry & Palmer*); South Mexico, San Felipe (*Andrieux*, 36), Chinantla 7000 feet (*Liebmann*), Barranca de la Cañada (*Schmitz*), San Nicolas, valley of Mexico (*Bourgeau*, 1039: *callolepis*), Real del Monte and Jalapa (*Coulter*, 1705, 1708). Hb. Kew.

The above synonymy may require some rectifications. *P. otites*, Linn., is reduced to *P. pectinatum* in the 'Species Filicum.'

60. **Polypodium (Goniophlebium) meniscifolium,** Langsd. et Fisch.; Hook. Sp. Fil. v. p. 26; Hook. et Bak. Syn. Fil. p. 346.

Polypodium preslianum, Link, Hort. Berol. ii. p. 102; Fourn. Mex. Pl. Enum. i. p. 79.
Polypodium neriifolium, Liebm. Mexicos Bregner, p. 40, non Presl ex Fourn.

South Mexico, Huitamalco (*Liebmann*), valley of Cordova (*Bourgeau*, 1647); Panama (*S. Hayes*).—West Indies; Brazil. Hb. Kew.

This would be better referred to *P. neriifolium*.

61. **Polypodium (Goniopteris) meniscoides,** Liebm. Mexicos Bregner, p. 59; Hook. Sp. Fil. v. p. 3, sub *P. crenato*; Hook. et Bak. Syn. Fil. p. 314; Fourn. Mex. Pl. Enum. i. p. 88.

Goniopteris rostrata, Fée, Hist. Foug. Antilles, p. 64, t. 7. fig. 3, teste Fourn.

South Mexico, Mirador and Teotalcingo, Oaxaca (*Liebmann*); Panama (ex *Fournier*). Hb. Kew.

62. **Polypodium mitchellæ,** Baker, n. sp.

"*P.* frondibus cæspitosis subsessilibus lanceolatis parvis firmulis, facie glabris, dorso pilosis, ad costam anguste alatam simpliciter pinnatifidis, e medio ad basin et ad apicem sensim attenuatis, pinnis oblique deltoideis, venis immersis occultis; soris magnis globosis costalibus ad pinnarum basin solitariis.

"Lamina 15–18 lineas longa, medio 2 lineas lata, pinnis 12–16-jugis 1 lin. longis latisque."—*Baker MSS.*

British Honduras, Orange Walk (*Mrs. Mitchell*). Hb. Kew.

63. **Polypodium moniliforme,** Lagasca; Hook. Sp. Fil. iv. p. 182; Hook. et Bak. Syn. Fil. p. 325; Fourn. Mex. Pl. Enum. i. p. 74.

Polypodium subcrenatum, Hook. Ic. Pl. t. 719.
Jamesonia adnata, Kunze, Farrnkr. ii. p. 80, t. 133. fig. 1.
Polypodium peruvianum, Desv. Mém. Soc. Linn. vi. p. 231, teste Fourn.

South Mexico, peak of Orizaba 9000 to 12,000 feet (*Linden*, 59; *Galeotti*, 6253; *Liebmann*); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Southward to Peru in the Andes. Hb. Kew.

64. **Polypodium (Goniophlebium) neriifolium,** Schkuhr; Hook. Sp. Fil. v. p. 28; Hook. et Bak. Syn. Fil. p. 345; Fourn. Mex. Pl. Enum. i. p. 79.

Goniophlebium neriifolium, J. Sm. in Hook. Journ. Bot. iv. p. 57, et in Seem. Bot. Voy. 'Herald,' p. 79.

South Mexico, region of Orizaba and valley of Cordova (*Bourgeau*, 1833 bis, 3057),

between San Bartolo and Pueblo Nuevo, Tabasco (*Linden*, 1518); Guatemala, without locality (*Skinner*); Nicaragua, Chontales (*Tate*, 52; *Seemann*, 204).—West Indies to Brazil and Peru. Hb. Kew.

65. **Polypodium (Phegopteris) nicaraguense,** Fourn. in Bull. Soc. Bot. France, xix. p. 252.

Nicaragua, Chontales (*Lévy*, 460 bis).

66. **Polypodium (Dictyopteris) nicotianæfolium,** Bak. in Hook. et Bak. Syn. Fil. p. 455, et in Journ. Bot. 1877, p. 165.

Nicaragua, Chontales (*Seemann*, 230); Peru. Hb. Kew.

67. **Polypodium (Goniophlebium) patens,** J. Sm. in Seem. Bot. Voy. 'Herald,' p. 230; Hook. Sp. Fil. v. p. 23; Hook. et Bak. Syn. Fil. p. 342.

Panama, Hacienda de Santa Rita (*Seemann*, 25). Hb. Kew.

68. **Polypodium pectinatum,** Linn.; Hook. Sp. Pl. iv. p. 203; Hook. et Bak. Syn. Fil. p. 333; Eaton, Ferns N. Am. i. p. 317, t. 42. figg. 1–3.

Polypodium wagneri, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 337; Fourn. Mex. Pl. Enum. i. p. 76, et in Bull. Soc. Bot. France, xix. p. 252 (errore *Phegopteris wagneri*).

Polypodium divaricatum, Fourn. loc. cit. p. 80?

Polypodium schkuhrii, Fourn. loc. cit. (species propria), non Raddi.

Polypodium recurvatum, Fourn. loc. cit. (species propria), vix Kaulf.

Polypodium consimile, Mett. in Eat. Fil. Wright. ex Hook.

Polypodium paradisæ, Langsd. et Fisch. Voy. Russ. p. 11, t. 11; Fourn. loc. cit. (species propria).

Florida.—South Mexico, valley of Cordova (*Bourgeau*, 1432: *wagneri*, 1432 bis: *paradisæ*, Fourn.; 1430: *consimile* β. *bourgeanum*, Fourn.), Chiapas, &c. (*Ghiesbreght*, 394), Teapa (*Linden*, 1504), Jalapa (*Galeotti*, 6333; *Linden*, 9); Guatemala, Chilion, near Mazatenango (*Bernoulli*, 394), without locality (*Skinner*); Nicaragua, Chontales (*Tate*, 49); Panama, Chagres (*Fendler*, 419), common in the isthmus (*S. Hayes*, 172). West Indies to Peru and Brazil. Hb. Kew.

At Mr. Baker's instigation we have reduced to this species several of the forms referred by Fournier to other distinct species on the evidence of the collector's numbers cited by the latter.

69. **Polypodium (Phymatodes) percussum,** Cav.; Hook. Sp. Fil. v. p. 55; Hook. et Bak. Syn. Fil. p. 356; Hook. Fil. Exot. t. 59; Bak. in Journ. Bot. 1884, p. 364.

South Mexico, Chiapas &c. (*Ghiesbreght*, 279); Guatemala, Yzabal (*Bernoulli*, 852); Nicaragua, Chontales (*Seemann*, 227; *Lévy*, 482); Costa Rica (*Harrison*).—Colombia to Peru and Brazil. Hb. Kew.

70. **Polypodium (Campyloneuron) phyllitidis,** Linn.; Hook. Sp. Fil. v. p. 38; Hook. et Bak. Syn. Fil. p. 348; Mart. et Gal. Foug. Mex. p. 30; Eaton, Ferns N. Am. i. p. 321, t. 42. figg. 4–7.

Campyloneuron phyllitidis, Presl, Tent. Pterid. p. 190; Fourn. Mex. Pl. Enum. i. p. 85, excl. var. β.
Campyloneuron jalapense, Fée, et *C. caudatum*, Fée?, 9e Mém. Foug. p. 26.
Polypodium costatum, Kunze in Linnæa, ix. p. 38; Mart. et Gal. loc. cit.

Florida.—South Mexico, Mirador (*Linden*, 56), Jalapa 4000 feet (*Galeotti*, 6273, 6404), Orizaba (*Bourgeau*, 1650 bis), valley of Cordova (*Bourgeau*, 1793); Guatemala, Chilasco, Yzabal and Volcan de Fuego (*Godman & Salvin*); Nicaragua, Chontales (*Lévy*, 487); Panama, Chagres (*Fendler*, 392).—West Indies to South Brazil. Hb. Kew.

71. **Polypodium (Goniophlebium) piloselloides,** Linn.; Hook. Sp. Fil. v. p. 33; Hook. et Bak. Syn. Fil. p. 340.
Craspedaria piloselloides, Fée.

Guatemala, Yzabal (*Bernoulli*, 897); Nicaragua, Chontales (*Tate*, 54).—West Indies and Tropical South America, common. Hb. Kew.

72. **Polypodium pilosissimum,** Mart. et Gal. Foug. Mex. p. 39, t. 9. fig. 2; Hook. Sp. Fil. iv. p. 181; Hook. et Bak. Syn. Fil. p. 327.
Polypodium rigescens, Fourn. Mex. Pl. Enum. i. p. 74, saltem pro parte, vix Bory.

South Mexico, Yavezia, Oaxaca 7500 feet, and Totutla (*Liebmann*), near Guajimalpa (*Schaffner*), Vera Cruz to Orizaba (*Müller*, 32), Cordillera of Oaxaca (*Galeotti*, 6379).—Southward to Ecuador and South Brazil. Hb. Kew.

Fournier enumerates *P. ferrugineum*, Mart. et Gal. (Foug. Mex. t. 7. fig. 2), syn. *P. xiphopteroides* (Liebm. Mexicos Bregner, p. 44), as a variety of *P. rigescens*. We have not seen plants upon which Martens and Galeotti founded their species. Baker (in Mart. Fl. Bras. Polypod. p. 515) cites *P. ferrugineum*, Mart. et Gal., as a synonym of *P. apiculatum*, Kunze.

73. **Polypodium (Goniophlebium) platylepis,** Mett. ex Kuhn in Linnæa, xxvi. p. 137; Hook. et Bak. Syn. Fil. ed. 2, p. 512.

South Mexico, Mirador and Toluca (*Linden*, 34, 61); Guatemala, without locality (*Skinner*). Hb. Kew.

74. **Polypodium plebeium,** Ch. et Schl. in. Linnæa, v. p. 607; Hook. Sp. Fil. iv. p. 213; Hook. et Bak. Syn. Fil. p. 336; Fourn. Mex. Pl. Enum. i. p. 82; Liebm. Mexicos Bregner, p. 46; Kunze in Linnæa, p. 319; Eaton in Proc. Am. Acad. xviii. p. 183.
Polypodium karwinskyanum, A. Braun; Mett. Polyp. p. 66.
Polypodium cheilosticton, Fée, et *P. oulolepis*, Fée, 8e Mém. Foug. pp. 86 et 87; Fourn. loc. cit. (species propriæ).
Polypodium madrense, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 331, t. 73.

North Mexico, Sierra Madre (*Seemann*, 684), south-east of Saltillo, Coahuila (*Palmer*, 1373), San Miguelito mountains (*Schaffner*, 940); South Mexico, Barranca de Santa Fé (*Bourgeau*, 684), Cordillera of Oaxaca at 3000 feet (*Galeotti*, 6277), Chiapas &c.

(*Ghiesbreght*, 247), Zacuapan (*Leibold*), valley of Cordova (*Bourgeau*, 1840), Chinantla, Puebla (*Liebmann*); GUATEMALA, Coban and Volcan de Fuego 8000 to 10,000 feet (*Godman & Salvin*).—Southward to PERU and BRAZIL. Hb. Kew.

75. **Polypodium (Goniophlebium) plectolepis,** Hook. Sp. Fil. v. p. 30; Hook. et Bak. Syn. Fil. p. 344; Fourn. Mex. Pl. Enum. i. p. 78.

Polypodium insigne, Liebm. Mexicos Bregner, p. 41.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1791, 1430), Totutla (*Liebmann*); GUATEMALA, Coban (*Godman & Salvin*, 405; *Türckheim*, 15). Hb. Kew.

76. **Polypodium (Goniophlebium) plesiosorum,** Kunze; Hook. et Bak. Syn. Fil. p. 342; Fourn. Mex. Pl. Enum. i. p. 80; Eaton in Proc. Am. Acad. xviii. p. 184; Bak. in Journ. Bot. 1884, p. 364.

Polypodium loriceum, Hook. Sp. Fil. v. p. 21, pro parte.
Polypodium rhodopleuron, Kunze, *P. gonatodes,* Kunze et *P. colpodes,* Kunze ex Hook. et Bak.
Polypodium catharinæ, Fourn. loc. cit. (species) vix Langsd. et Fisch.
Polypodium deltoideum, Liebm. Mexicos Bregner, p. 38?
Polypodium conterminans, Liebm., et *P. confluens,* Liebm., Mexicos Bregner, pp. 39 et 49; Fourn. loc. cit. p. 81 (species propriæ).
Polypodium (*Goniophlebium*) *anisomeron,* Fée, 8e Mém. Foug. p. 93; Fourn. loc. cit. (species propria) pro parte.
Polypodium lesourdianum, Fourn. loc. cit. p. 82?
Goniophlebium molestum, Fée, 8e Mém. Foug. p. 92.

SOUTH MEXICO, Huatusco (*Liebmann: molestum*, ex Fourn.), Chinantla 7000 feet (*Liebmann: catharinæ*, Fourn.), same locality (*Liebmann: conterminans*, Fourn.), region of Orizaba (*Bourgeau*, 2887: *rhodopleurum*, Fourn.), Chiapas &c. (*Ghiesbreght*, 246, 413); GUATEMALA, Coban, San Gerónimo, Dueñas, and Volcan de Fuego (*Godman & Salvin*); NICARAGUA (*Lévy*, 1486); COSTA RICA (*Harrison*).—VENEZUELA. Hb. Kew.

77. **Polypodium (Phegopteris) polystichoides,** Klotzsch in Linnæa, xx. p. 383.

Polypodium (*Phegopteris*) *platyphyllum,* Hook. Sp. Fil. iv. p. 248; Hook. et Bak. Syn. Fil. p. 310.

GUATEMALA, without locality (*Skinner*).—CUBA to BRAZIL and PERU. Hb. Kew.

This is a polypodioid form of *Aspidium aculeatum.*

78. **Polypodium pruinatum,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 508.

NICARAGUA, Chontales (*Tate*, 44). Hb. Kew.

79. **Polypodium puberulum,** Ch. et Schl. in Linnæa, v. p. 607; Hook. Sp. Fil. iv. p. 220, pro parte; Hook. et Bak. Syn. Fil. p. 336; Fourn. Mex. Pl. Enum. i. p. 76, excl. syn.

SOUTH MEXICO, Jalapa (*Harris*), Volcan de Tuxtla, Vera Cruz (*Galeotti*, 6570); NICARAGUA, Chontales (*Lévy*, 1477). Hb. Kew.

80. **Polypodium pubescens,** Fée, 8e Mém. Foug. p. 87; Hook. et Bak. Syn. Fil. ed. 2, p. 509; Fourn. Mex. Pl. Enum. i. p. 77.

South Mexico, Azul near Orizaba (*Bourgeau*, 3149). Hb. Kew.

81. **Polypodium (Phegopteris) refulgens,** Klotzsch; Hook. et Bak. Syn. Fil. p. 307.

Panama (ex Hook. et Bak.).—Colombia to Guiana.

82. **Polypodium (Campyloneuron) repens,** Linn.; Hook. Sp. Fil. v. p. 39; Hook. et Bak. Syn. Fil. p. 348; Bak. in Journ. Bot. 1884, p. 364.

Campyloneuron repens, Presl, Tent. Pterid. p. 190; Hook. Gen. Fil. t. 71 A.
Campyloneuron phyllitidis, Presl, var. β; Fourn. Mex. Pl. Enum. i. p. 85.

South Mexico, region of Orizaba (*Bourgeau*, 1650), Chiapas &c. (*Ghiesbreght*, 292); Guatemala, Chilasco (*Godman & Salvin*); Nicaragua (*Tate*, 58); Costa Rica (*Harrison*).—West Indies to Peru and Brazil. Hb. Kew.

83. **Polypodium (Goniopteris) reptans,** Swartz; Hook. Sp. Fil. v. p. 5; Hook. et Bak. Syn. Fil. p. 316.

Aspidium reptans, Mett. Pheg. and Aspid. p. 98.
Phegopteris cordata, Fée, Gen. Fil. p. 244.

South Mexico, Rio Blanco, Orizaba, and valley of Cordova (*Bourgeau*, 2007, 2514); Guatemala, mountains of Vera Paz (*Salvin*).—West Indies to Brazil. Hb. Kew.

84. **Polypodium (Dictyopteris) rheosorum,** Bak. in Journ. Bot. 1884, p. 363.

Costa Rica, without locality (*Harrison*). Hb. Kew.

85. **Polypodium rigescens,** Bory; Hook. et Grev. Ic. Fil. t. 216; Hook. et Bak. Syn. Fil. p. 331.

South Mexico, Cerro de Pelado 7000 to 10,000 feet (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 317).—Cuba to Chili and Brazil; also in Fernando Po and Bourbon. Hb. Kew.

86. **Polypodium (Phegopteris) rigidum,** Hook. et Grev. Ic. Fil. t. 163; Hook. et Bak. Syn. Fil. p. 310.

Polypodium rigidum et *P. pycnolepis,* Hook. Sp. Fil.

South Mexico, around the city of Mexico (*Schmitz*); Guatemala, Volcan de Agua (*Godman & Salvin*).—Colombia to Peru. Hb. Kew.

87. **Polypodium (Phegopteris) rude,** Kunze; Hook. Sp. Fil. iv. p. 243; Hook. et Bak. Syn. Fil. p. 307; Fourn. Mex. Pl. Enum. i. p. 89, pro parte.

Alsophila pilosa, Mart. et Gal. Foug. Mex. p. 78, t. 22; Hook. Sp. Fil. i. p. 47.
Phegopteris pilosa, P. impressa, Fée, et *P. rudis,* Fée, 9e Mém. Foug.

South Mexico, Mirador (*Linden*, 75; *Liebmann; Galeotti*, 6405), Chiapas &c. (*Ghiesbreght*, 254); Guatemala, Chilasco (*Godman & Salvin*).—Southward to Peru. Hb. Kew.

88. **Polypodium serrulatum,** Mett. Polyp. p. 32; Hook. Sp. Fil. iv. p. 174; Hook. et Bak. Syn. Fil. p. 323.

Grammitis serrulata, Swartz; Hook. Fil. Exot. t. 78.

Xiphopteris serrulata, Kaulf., et *X. myosuroides,* Kaulf., Enum. Fil. p. 85; Mart. et Gal. Foug. Mex. p. 29; Liebm. Mexicos Bregner, pp. 30 et 31; Fourn. Mex. Pl. Enum. i. p. 74.

South Mexico, near Huatusco (*Schaffner*), Totutla and Aguas Santas (*Liebmann*); Guatemala, Coban, 6000 feet (*Türckheim*); Nicaragua, Chontales (*Tate*, 46; *Seemann*, 220).—West Indies to Brazil, Peru and Juan Fernandez; also in the Sandwich Islands, Tropical Africa, and the Mascarene Islands. Hb. Kew.

89. **Polypodium (Goniophlebium) sessilifolium,** Liebm. Mexicos Bregner, p. 40; Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 512; Fourn. Mex. Pl. Enum. i. p. 78.

Goniophlebium serratum, Fée, 8e Mém. Foug. p. 95.

South Mexico, Izhuatlancillo (*Bourgeau*, 2891, 2892, 3071 bis). Hb. Kew.

90. **Polypodium skinneri,** Hook. Sp. Fil. iv. p. 214, t. 286 B; Hook. et Bak. Syn. Fil. p. 331.

Guatemala, without locality (*Skinner*). Hb. Kew.

91. **Polypodium sororium,** H. B. K.; Hook. Sp. Fil. iv. p. 219; Hook. et Bak. Syn. Fil. p. 337.

South Mexico, Jalapa (*Harris*), Volcan de Tuxtla, Vera Cruz (*Galeotti*, 6570); Nicaragua, Chontales (*Lévy*, 1477; *Tate*, 48).—Cuba to Peru. Hb. Kew.

92. **Polypodium (Campyloneuron) sphenodes,** Kunze; Hook. Sp. Fil. v. p. 42, t. 282; Hook. et Bak. Syn. Fil. p. 348.

Guatemala, Volcan de Fuego (*Godman & Salvin*, 51).—Colombia and Ecuador. Hb. Kew.

93. **Polypodium (Goniophlebium) squamatum,** Linn.; Hook. Sp. Fil. iv. p. 209; Hook. et Bak. Syn. Fil. p. 346; Fourn. Mex. Pl. Enum. i. p. 84, cum var. β.

Goniophlebium lepidotrichum, Fée, 8e Mém. Foug. p. 93, ex Fourn.

South Mexico, region of Orizaba and valley of Cordova (*Bourgeau*, 1446, 2883); Mirador (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 210); Guatemala, without locality (*Skinner*), Yzabal (*Godman & Salvin*).— West Indies to Peru. Hb. Kew.

94. **Polypodium (Goniophlebium) stenoloma,** Eaton in Proc. Am. Acad. viii. p. 2, non *Drynaria stenoloma*, Fée.

South Mexico, Chiapas &c. (*Ghiesbreght*, 386). Hb. Kew.

95. **Polypodium subpetiolatum,** Hook. Sp. Fl. iv. p. 220; Hook. et Bak. Syn. Fil. p. 336; Eaton in Proc. Am. Acad. xviii. p. 183; Fourn. Mex. Pl. Enum. i. p. 78.

Polypodium biserratum, Mart. et Gal. Foug. Mex. p. 38, t. 9. fig. 1.

Polypodium schaffneri, Fée, 9e Mém. Foug. p. 22, teste Fourn.

North Mexico, Lerios mountains, Saltillo, Coahuila (*Palmer*); South Mexico, near

Santa Fé (*Bourgeau*, 463 bis), Regla (*Hartweg*, 414), valley of Mexico (*Schmitz; Schaffner; Graham*), Chiapas &c. (*Ghiesbreght*), San Nicolas (*Bourgeau*, 1038: *biserratum*); Guatemala, Coban (*Salvin*).—Cuba. Hb. Kew.

Fournier treats *biserratum* and *subpetiolatum* as distinct species.

96. **Polypodium subscabrum,** Klotzsch in Linnæa, xx. p. 377; Hook. Sp. Fil. iv. p. 183, t. 274.

South Mexico, Chiapas &c. (*Ghiesbreght*, 318).—Colombia; Ecuador. Hb. Kew.

97. **Polypodium subsessile,** Bak. in Hook. et Bak. Syn. Fil. p. 329.

Polypodium pteropus, Hook. Sp. Fil. iv. p. 223, non Blume.

Guatemala, Coban (*Salvin & Godman*, 356).—Colombia to Ecuador and Guiana. Hb. Kew.

98. **Polypodium suspensum,** Linn.; Hook. Sp. Fil. iv. p. 196; Hook. et Bak. Syn. Fil. p. 329; Fourn. Mex. Pl. Enum. i. p. 75.

Polypodium laxum, Fée, var. *majus* ex Fourn.

Polypodium laxifrons, Liebm. Mexicos Bregner, p. 52.

South Mexico, Mirador (*Liebmann*), Jalapa (*Harris*), Chiapas &c. (*Ghiesbreght*); Guatemala, without locality (*Skinner*), Chilasco (*Godman & Salvin*).—Cuba to Ecuador and South Brazil. Hb. Kew.

99. **Polypodium (Dictyoperis) tatei,** Bak. in Hook. et Bak. Sp. Fil. ed. 2, p. 506.

Nicaragua, Chontales (*Tate*, 41). Hb. Kew.

100. **Polypodium taxifolium,** Linn.; Hook. et Bak. Syn. Fil. p. 332.

Polypodium plumula, Hook. Sp. Fil. iv. p. 200, pro parte.

Polypodium lherminieri, Fée, Hist. Foug. Ant.

Guatemala, Chilasco (*Godman & Salvin*).—West Indies to Ecuador and Brazil. Hb. Kew.

101. **Polypodium (Goniopteris) tetragonum,** Swartz; Hook. Sp. Fil. v. p. 3; Hook. et Bak. Syn. Fil. p. 317; Fourn. Mex. Pl. Enum. i. p. 88.

Goniopteris leptocladia, Fée, Hist. Foug. Ant. p. 60, t. 16. fig. 1; Fourn. loc. cit. (species propria).

Goniopteris megalodus, Presl, Tent. Pterid. p. 182; Fourn. loc. cit. (species propria).

Phegopteris megalodus, Mett. Pheg. und Aspid. p. 24.

Polypodium megalodus, Schkuhr, Fil. p. 24, t. 19.

South Mexico, Teapa (*Linden*), Orizaba (*Botteri*); Nicaragua, near Granada (*Lévy*, 55; *Tate*, 42); Panama (*Cuming*, 1301), Chagres (*Fendler*, 403).—Cuba to Peru and Brazil. Hb. Kew.

102. **Polypodium (Goniophlebium) thyssanolepis,** A. Braun; Hook. et Bak. Syn. Fil. ed. 2, p. 512; Fourn. Mex. Pl. Enum. i. p. 84; Eaton in Proc. Am. Acad. xviii. p. 184.

Polypodium rhagadiolepis, Fée, Gen. Fil. p. 237.
Goniophlebium rhagadiolepis, Fée, 7e Mém. Foug. p. 62, t. 19. fig. 3.
Heteroneuron paradoxum, Fée, 6e Mém. t. 1, teste Fourn.
Polypodium lanuginosum, Nees in Linnæa, xix. p. 683?

Arizona.—North Mexico, San Luis Potosi (*Schaffner*, 939; *Parry & Palmer*, 971); South Mexico, Oaxaca 5000 to 7000 feet (*Galeotti*, 6422, 6521, 6545), region of Orizaba and San Angel, valley of Mexico (*Bourgeau*, 254, 2780), Sierra San Pedro Nolasco &c. (*Jurgensen*, 690).—Southward to Peru. Hb. Kew.

Fournier also refers here *P. incanum*, var. *fimbriatum*, Mart. et Gal., and *P. incanum*, var. *umbrosum*, Liebm.

103. **Polypodium trichomanoides,** Swartz; Hook. Sp. Fil. iv. p. 178; Hook. et Bak. Syn. Fil. p. 326.

Guatemala, Coban (*Godman & Salvin*, 390); Nicaragua, Chontales (*Tate*, 47; *Seemann*, 231); Panama (*Seemann*, 366).—Cuba to Ecuador and Brazil; also in Tropical Asia, Ascension, and Juan Fernandez. Hb. Kew.

104. **Polypodium (Goniophlebium) trilobum,** Cav.; Hook. et Bak. Syn. Fil. p. 341; Fourn. Mex. Pl. Enum. i. p. 78.
Mecosorus trilobus, Klotzsch in Linnæa, xx. p. 406, ex Fourn.
Polypodium rhachipterygium, Liebm. Mexicos Bregner, p. 39.

South Mexico, Teotalcingo (*Liebmann*), Oaxaca 3000 feet (*Galeotti*, 6511).—Chili.

Included on the authority of Fournier; in the Kew Herbarium the only specimens referred to this species are from Chili and Juan Fernandez.

105. **Polypodium truncicola,** Klotzsch; Mett. Polyp. p. 40; Hook. Sp. Fil. iv. p. 178; Hook. et Bak. Syn. Fil. p. 508.

Guatemala (*Godman & Salvin*); Nicaragua, Chontales (*Tate*, 45).—Colombia, Guiana, and Jamaica. Hb. Kew.

106. **Polypodium undulatum,** Fourn. Mex. Pl. Enum. i. p. 75, cum var. *parvulum*.
Polypodium gibbosum, Fée, 8e Mém. Foug. p. 126, ex Fourn.

South Mexico, near Jalapa (*Hahn*), Oaxaca (*Galeotti*, 6378, in part).—Guiana; Ecuador.

Fournier places this next to *P. elasticum*, and adds "Cfr. *P. angustifrons*, Kunze in Linnæa, xiii. p. 134 quod nobis ignotum."

107. **Polypodium (Goniophlebium) vaccinifolium,** Fisch. et Langsd. Fil. p. 8, t. 7; Hook. Sp. Fil. v. p. 35; Hook. et Bak. Syn. Fil. p. 340.

Nicaragua, Chontales (*Tate*, 42; *Lévy*, 1492).—Jamaica to Paraguay.

108. **Polypodium vanheurckii,** Fourn. Mex. Pl. Enum. i. p. 82.

South Mexico, San Andres and Escamela, Orizaba (*Botteri*).

109. **Polypodium vulgare,** Linn.; Hook. Sp. Fil. iv. p. 205; Hook. et Bak. Syn. Fil. p. 334; Eaton, Ferns N. Am. i. p. 237, t. 31. figg. 1–3.

Canada southward.—South Mexico, Oaxaca 5000 feet (*Galeotti*, 6552).—Widely spread in the Northern Hemisphere, and reappearing in South Africa and in Kerguelen Island. Hb. Kew.

Species dubiæ.

Polypodium ciliatum, Presl, Reliq. Hænk. i. p. 20.

Phegopteris blanda, Fée, 8e Mém. Foug. p. 91.

Phegopteris melanorrhachis, Fée, 8e Mém. Foug. p. 91.

[*Polypodium irregulare*, Presl, Reliq. Hænk. t. 4, a native of Java, and *Phegopteris epieroides*, Fée, 5e Mém. p. 248, a native of Cuba, have been erroneously recorded as Mexican.]

Tribe XII. GRAMMITIDEÆ.

There are eleven genera of this Tribe, all of which are represented within our limits except *Jamesonia*, an Andine monotype; *Brainea*, an Asiatic monotype; and *Drymoglossum*, an Asiatic genus of three or four species.

32. NOTHOLÆNA.

Notholæna, R. Br.; Hook. et Bak. Syn. Fil. pp. 370 et 514 (*Nothochlæna*), t. 6. fig. 50.

About thirty-five species, generally diffused in warm countries, but most numerous in America, and especially characteristic of the Texano-Mexican region.

1. **Notholæna (Cincinalis) affinis,** Hook. Sp. Fil. v. p. 109; Hook. et Bak. Syn. Fil. p. 373.

Notholæna pulveracea, Klotzsch in Linnæa, xx. p. 417, excl. synon.
Cheilanthes affinis, Mett. Cheil. und Aspl. p. 19.
Aleuritopteris pulveracea, Fée, 9e Mém. Foug. p. 35.
Aleuritopteris affinis, Fourn. Mex. Pl. Enum. i. p. 121.

Mexico, without locality (*Aschenborn*); Guatemala, Motagua valley (*Godman & Salvin*). Hb. Kew.

2. **Notholæna aschenborniana,** Klotzsch; Hook. Sp. Fil. v. p. 117, t. 287 B; Hook. et Bak. Syn. Fil. p. 371; Eaton in Proc. Am. Acad. xviii. p. 184.

Cheilanthes aschenborniana, Mett. Cheil. und Aspl. p. 21; Fourn. Mex. Pl. Enum. i. p. 124.
Notholæna bipinnata, Liebm. Mexicos Bregner, p. 62.
Notholæna galeottii, Fée, Gen. Fil. 159.

Arizona; Texas.—North Mexico, Lerios in the high mountains east of Saltillo, Chihuahua, and at Monterey, Nuevo Leon (*Palmer*); South Mexico, Zimapan (*Coulter*, 1679), Oaxaca 8000 feet (*Galeotti*, 6565). Hb. Kew.

3. **Notholæna brachypus,** J. Sm.; Eaton in Proc. Am. Acad. xviii. p. 184.

Cheilanthes brachypus, Kunze in Linnæa, xxiii. p. 307; Kuhn, Beitr. p. 4; Fourn. Mex. Pl. Enum. i. p. 124.

Cheilanthes squamosa, Gill., var. *brachypus,* Kunze in Linnæa, xviii. p. 340; Hook. Sp. Fil. ii. p. 115; Liebm. Mexicos Bregner, p. 105.

Notholæna squamosa, Hook. et Bak. Syn. Fil. p. 371.

Cheilanthes squamosa, Gill.; Hook. Sp. Fil. ii. p. 82; Hook. et Grev. Ic. Fil. t. 151.

North Mexico, region of San Luis Potosi (*Parry & Palmer*, 998); South Mexico (*Leibold*); Guatemala, without locality (*Godman & Salvin*); Salvador, Sonsonati (*Skinner*).—Southward to Peru. Hb. Kew.

4. **Notholæna (Cincinalis) candida,** Hook. Sp. Fil. v. p. 110; Eaton, Ferns N. Am. ii. p. 21, t. 49. figg. 1–3, et in Proc. Am. Acad. xviii. p. 185.

Notholæna sulphurea, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 233; Hook. et Benth. Syn. Fil. p. 373.

Notholæna pulveracea, Kunze in Linnæa, xiii. p. 135; Liebm. Mexicos Bregner, p. 63.

Notholæna cretacea, Liebm. loc. cit. p. 64.

Cheilanthes candida, Mart. et Gal. Foug. Mex. p. 73, t. 20. fig. 1.

Aleuritopteris candida, Fée, Gen. Fil. p. 154; Fourn. Mex. Pl. Enum. i. p. 121.

Aleuritopteris cretacea, Fourn. loc. cit. (species propria).

Cheilanthes cretacea, Mett., et *C. monosticha,* Mett. Cheil. und Aspl. p. 20.

Texas to California.—North Mexico, Guajuco and Monterey, Nuevo Leon, and Monclova, Coahuila (*Palmer*, 1380, 1381); South Mexico, Tehuacan de las Grandes (*Liebmann*), Guadalaxara and Oaxaca 4000 feet (*Galeotti*, 6442); Guatemala, San Gerónimo (*Godman & Salvin*).—Colombia to Peru. Hb. Kew.

5. **Notholæna cinnamomea,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 515.

Guatemala, Motagua valley (*Salvin & Godman*). Hb. Kew.

6. **Notholæna (Cincinalis) dealbata,** Kunze; Hook. Sp. Fil. v. p. 113; Hook. et Bak. Syn. Fil. p. 374; Eaton, Ferns N. Am. i. p. 69, t. 9. fig. 2.

Notholæna pulchella, Kunze in Bot. Zeit. i. p. 633.

Cheilanthes dealbata, Pursh, Fl. Am. Sept. ii. p. 671.

Cincinalis dealbata, Fée, Gen. Fil. p. 160.

Gymnogramme dealbata, Mett. Cheil. und Aspl. p. 6.

Kansas; New Mexico and Arizona.—North Mexico, in several localities south of the Gila (*Rothrock*), but apparently not hitherto collected within the present Mexican boundary.

7. **Notholæna deltoidea,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 514.

Mexico, without locality (*Leibold*). Hb. Kew.

8. **Notholæna ferruginea,** Desv.; Hook. Sp. Fil. v. p. 108; Hook. et Bak. Syn. Fil. p. 370; Fourn. Mex. Pl. Enum. i. p. 120, cum var. β; Eaton, Ferns N. Am. i. p. 297, t. 39. figg. 7–10, et in Proc. Am. Acad. xviii. p. 184; Hook. 2nd Cent. Ferns, t. 52.

Cheilanthes ferruginea, Willd.; Kaulf. Enum. Fil. p. 209; Ch. et Schl. in Linnæa, v. p. 615.
Pellæa ferruginea, Nees in Linnæa, xix. p. 120.
Notholæna rufa, Presl, Reliq. Hænk. i. p. 19; Liebm. Mexicos Bregner, p. 62.
Notholæna trichomanoides, Mart. et Gal. Foug. Mex. p. 45, non R. Br.

Texas; New Mexico; Arizona.—North Mexico, Soledad (*Palmer*, 1399), Sierra Madre (*Seemann*, 1942, 1943), region of San Luis Potosi (*Schaffner*, 946; *Parry & Palmer*, 993, 994); South Mexico, region of Orizaba (*Müller*, 70; *Bourgeau*, 2153), valley of Mexico (*Galeotti*, 6437; *Schmitz; Schaffner; Bourgeau*, 257), Zimapan (*Coulter*, 1680), Cerro de San Felipe, Oaxaca (*Liebmann*), Zacuapan (*Leibold*), Chiapas &c. (*Ghiesbreght*, 275, 304); Guatemala, San Gerónimo (*Godman & Salvin*).—West Indies and Colombia to Chili. Hb. Kew.

9. **Notholæna grayi,** Davenport in Eaton's Ferns N. Am. ii., Conspectus, p. 31; Eaton in Proc. Am. Acad. xviii. p. 184.

Arizona.—North Mexico, Sonora (*Schott*), Soledad, Coahuila (*Palmer*, 1388), San Rafael mountains, San Luis Potosi (*Schaffner*, 962). Hb. Kew.

10. **Notholæna hookeri,** Eaton, Ferns of the South-West, p. 308, t. 30, Ferns N. Am. ii. p. 25, t. 49. figg. 4–7, et in Proc. Am. Acad. xviii. p. 184.
Notholæna cretacea, Eaton in Bot. U. S. & Mex. Bound. Surv. p. 234, non Liebm.
Notholæna candida, var. *quinquefidopalmata,* Hook. Sp. Fil. v. p. 111.

New Mexico; Arizona.—North Mexico, Saltillo and San Lorenzo de Laguna, Coahuila (*Palmer*, 1379), region of San Luis Potosi (*Parry & Palmer*, 992). Hb. Kew.

11. **Notholæna mollis,** Kunze, Farrnkr. i. p. 115, t. 53. fig. 2; Hook. Sp. Fil. v. p. 119; Hook. et Bak. Syn. Fil. p. 372.
Cheilanthes mollis, Presl; Mett. Cheil. und Aspl. p. 29.

Guatemala, Savana Grande (*Godman & Salvin*).—Chili. Hb. Kew.

12. **Notholæna (Cincinalis) nivea,** Desv.; Hook. Sp. Fil. v. p. 111; Hook. et Bak. Syn. Fil. p. 374; Eaton in Proc. Am. Acad. xviii. p. 185; Kunze, Farrnkr. i. p. 43, t. 12. fig. 1; Liebm. Mexicos Bregner, p. 64.
Cincinalis nivea, Fée, Gen. Fil. p. 160; Fourn. Mex. Pl. Enum. i. p. 121.
Gymnogramme nivea, Mett. Cheil. und Aspl. p. 7.
Notholæna incana, Presl, Reliq. Hænk. i. p. 19, t. 1. fig. 2.

Arizona.—North Mexico, Monterey, Nuevo Leon (*Palmer*, 1386), San Rafael mountains (*Schaffner*, 961), Lerios (*Palmer*, 1387; var. *flava*); South Mexico, barranca near Santa Fé (*Bourgeau*, 754), around Mexico (*Schmitz; Schaffner*), Chiapas &c. (*Ghiesbreght*, 226); Guatemala, Quesaltenango (*Godman & Salvin*).—Colombia to Peru. Hb. Kew.

"A *Notholæna* with fronds three to four inches long, narrower in outline, and with closely placed subcoriaceous pinnules, which may be a form of this species, was found

at several places in Coahuila and Nuevo Leon (*Palmer*, 1382, 1383, 1384). Mr. Davenport pronounces *N. dealbata* a slender form of *N. nivea*, and the various intermediate forms in herbaria justify his view."—*Eaton, loc. cit.*

13. **Notholæna sinuata,** Kaulf. Enum. Fil. p. 135; Kunze, Farrnkr. i. p. 95, t. 45; Hook. Sp. Fil. v. p. 107; Hook. et Bak. Syn. Fil. p. 370; Bot. Mag. t. 4699; Fourn. Mex. Pl. Enum. i. p. 120, cum var. *integra* et *pruinosa*; Eaton, Ferns N. Am. i. p. 293, t. 39. figg. 1–6, et in Proc. Am. Acad. xviii. p. 184; Liebm. Mexicos Bregner, p. 61.

Gymnogramme sinuata, Presl, Tent. Pterid. p. 219; Mett. Cheil. und Aspl. p. 6.
Notholæna lævis, Mart. et Gal. Foug. Mex. p. 46.
Notholæna pruinosa, Fée, 8e Mém. Foug. p. 78; 9e Mém. p. 12; 10e Mém. p. 20, t. 34. fig. 2.

Texas to Arizona.—North Mexico, many stations in Coahuila and Nuevo Leon (*Palmer*, 1400–1410), region of San Luis Potosi (*Parry & Palmer*, 995–997; *Schaffner*, 947), Sierra Madre (*Seemann*, 1935 and 1928: var. *pinnis integris*); South Mexico, Chinantla, Puebla 7000 feet (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 212; *Linden*, 1544), valley of Mexico (*Bourgeau*, 253; *Schmitz*), region of Orizaba (*Müller*, 69; *Bourgeau*, 2770: *pruinosa*), San Felipe (*Andrieux*, 33), Chapultepec (*Schaffner*), Tacubaya (*Bilimek*), Oaxaca 7000 feet (*Galeotti*, 6350), Consoquitla near Mirador (*Linden*), Real del Monte to Zacatecas (*Coulter*, 1681).—Colombia to Chili. Hb. Kew.

33. MONOGRAMME.

Monogramme, Schkuhr; Hook. et Bak. Syn. Fil. p. 374, t. 6. fig. 51.

Nine species, spread over tropical regions in both hemispheres, though apparently not reaching either India or Tropical Africa.

1. **Monogramme (Pleurogramme) immersa,** Hook. Sp. Fil. v. p. 125; Hook. et Bak. Syn. Fil. p. 376.

Pleurogramme immersa, Fée, Vittar. p. 37, t. 4. fig. 5.

Nicaragua, without locality (*Wright*).—Cuba; Venezuela; Guiana. Hb. Kew.

2. **Monogramme (Pleurogramme) myrtillifolia,** Hook. Sp. Fil. v. p. 125.

Pleurogramme myrtillifolia, Fée, Gen. Fil. p. 101, t. 10 c, et 9e Mém. Foug. p. 5; Fourn. Mex. Pl. Enum. i. p. 74.

Mexico, without locality (ex *Fée*).

This miniature fern was not seen by Fournier, and it does not appear to be in the Kew Herbarium.

3. **Monogramme rostrata,** Hook. Sp. Fil. v. p. 122, t. 288 B; Hook. et Bak. Syn. Fil. p. 375.

Nicaragua, Omotepé Island, lake of Nicaragua (*Wright*). Hb. Kew.

4. **Monogramme (Pleurogramme) seminuda,** Bak. in Hook. et Bak. Syn. Fil. p. 375.

Monogramme (*Pleurogramme*) *graminifolia,* Hook. Sp. Fil. v. p. 124.

GUATEMALA, Chilasco (*Godman & Salvin*).—WEST INDIES to SOUTH BRAZIL. Hb. Kew.

34. GYMNOGRAMME.

Gymnogramme, Desv.; Hook. et Bak. Syn. Fil. p. 376, et ed. 2, p. 515, t. 6. fig. 52.

About one hundred species, generally diffused within the tropics, and some of them ascending to great altitudes; rare in temperate regions without the tropics. Most numerous in America.

1. **Gymnogramme (Leptogramme) asplenoides,** Kaulf.; Hook. Sp. Fil. v. p. 132; Hook. et Bak. Syn. Fil. p. 376.

SOUTH MEXICO, Sierra San Pedro Nolasco &c. (*Jurgensen*, 635); PANAMA, Boquete, Veraguas (*Seemann*, 1555).—Southward to PERU and BRAZIL. Hb. Kew.

2. **Gymnogramme (Ceropteris) calomelanos,** Kaulf.; Hook. Sp. Fil. v. p. 148; Hook. Gen. Fil. t. 76; Hook. et Bak. Syn. Fil. p. 385; Fourn. Mex. Pl. Enum. i. p. 72; Liebm. Mexicos Bregner, p. 28; Eaton in Proc. Am. Acad. xviii. p. 184.

Ceropteris calomelanos, Link, et *C. serrata,* Fée, 9e Mém. Foug. p. 14.

Gymnogramme peruviana, Desv.; Fourn. Mex. Pl. Enum. i. p. 72 (species propria).

Ceropteris plicata, Fée, et *C. schaffneri,* Fée 8e Mém. Foug. pp. 80 et 81.

NORTH MEXICO, San Luis Potosi (*Parry & Palmer*, 985); SOUTH MEXICO, region of Orizaba (*Bourgeau*, 2150: *serrata* ex Fourn.; *Müller*, 727), mountains of Mexico (*Hartweg*, 630), valley of Cordova (*Bourgeau*, 2198), Amatlan (*Bourgeau*, 1445), Chiapas (*Ghiesbreght*, 276, 283, 452, 453: varietates distinctæ); NICARAGUA, Omotépé and Virgin Bay (*Wright*); COSTA RICA (*Harrison*).—WEST INDIES to PERU and BRAZIL; also in POLYNESIA and WESTERN TROPICAL AFRICA. Hb. Kew.

3. **Gymnogramme chærophylla,** Desv.; Hook. Sp. Fil. v. p. 136; Hook. et Bak. Syn. Fil. p. 383; Fourn. Mex. Pl. Enum. i. p. 73; Kuhn, Beitr. Mex. Farrnkr. p. 1.

SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1451), without locality (*Christie*); GUATEMALA, without locality (*Skinner*).—WEST INDIES to PARAGUAY and the ARGENTINE REPUBLIC. Hb. Kew.

4. **Gymnogramme (Leptogramme) diplazioides,** Desv.; Hook. et Bak. Syn. Fil. p. 377.

Gymnogramme rupestris, Kunze, et *G. linkiana,* Kunze; Hook. Sp. Fil. v. p. 140; Fourn. Mex. Pl. Enum. i. p. 73.

Gymnogramme polypodioides, Link, Hort. Berol. ii. p. 50.

Polypodium concinnum, Liebm. Mexicos Bregner, p. 52, teste Fourn.

Gymnogramme totla, Mart. et Gal. Foug. Mex. p. 26, non Schl. ex Fourn.

Gymnogramme cheilosorus, Fée, 8e Mém. Foug. p. 79.

Aspidium producens, Fée, 10e Mém. p. 38.

South Mexico, near Mirador (*Liebmann*), Sierra San Pedro Nolasco &c. (*Jurgensen*, 888, 964), Popocatepetl and Totutla (*Schaffner*); Guatemala, Chilasco (*Godman & Salvin.*—West Indies to Peru and South Brazil. Hb. Kew.

5. **Gymnogramme ehrenbergiana,** Klotzsch; Eaton in Proc. Am. Acad. xviii. p. 184.

Gymnogramme hispida, Mett. ex Kuhn in Linnæa, xxxvi. p. 72; Hook. et Bak. Syn. Fil. ed. 2, p. 516; Eaton, Ferns N. Am. ii. p. 19, t. 47. figg. 6–11.
Gymnogramme podophylla, Hook. Sp. Fil. v. p. 152; Hook. et Bak. Syn. Fil. p. 390.
Stenogramme ehrenbergiana, Klotzsch in Linnæa, xx. p. 412; Fourn. Mex. Pl. Enum. i. p. 71.
Neurogramme pedata, Eaton in Bot. U. S. & Mex. Bound. Surv. p. 235, non Link.
Gymnogramme pedata, Eaton in Robinson's Check List, non Kaulf.
Bommeria podophylla, Fourn. in Bull. Soc. Bot. France, xxvii. p. 328.

Texas to Arizona.—North Mexico, Escobrillos mountains, San Luis Potosi (*Schaffner*, 928; *Parry & Palmer*, 1006); South Mexico, Vera Cruz to Orizaba (*Müller*, 719), Comaltepec, Oaxaca (*Liebmann*); Guatemala, Volcan de Fuego and San Gerónimo (*Godman & Salvin*). Hb. Kew.

Bommeria schaffneri, Fourn. (in Bull. Soc. Bot. France, xviii. p. 327), from the Escobrillos mountains, is probab y the same species.

6. **Gymnogramme (Selliguea) elongata,** Hook. Sp. Fil. v. p. 157; Hook. et Bak. Syn. Fil. p. 387.

Polypodium elongatum, Mett. Polyp. p. 88.
Pleopeltis elongata, Fourn., et *P. astrolepis,* Fourn. Mex. Pl. Enum. i. p. 87.
Polypodium astrolepis, Liebm. Mexicos Bregner, p. 33.
Drynaria elongata, Fée, et *D. prieurii,* Fée, Gen. Fil. pp. 270, 271.

South Mexico, region of Orizaba (*Bourgeau*, 2366), Chiapas &c. (*Ghiesbreght*, 446); Guatemala, Coban (*Godman & Salvin*), Mazatenango (*Bernoulli*, 389).—Cuba to Brazil and Juan Fernandez. Hb. Kew.

7. **Gymnogramme ferruginea,** Kunze; Hook. Sp. Fil. v. p. 130; Hook. et Bak. Syn. Fil. p. 381.

Panama, Boquete, Veraguas (*Seemann*, 1125).—Peru. Hb. Kew.

8. **Gymnogramme flexuosa,** Desv.; Hook. Sp. Fil. v. p. 129; Hook. et Bak. Syn. Fil. p. 384.

Gymnogramme retrofracta, Hook. et Grev. in Hook. Bot. Misc. iii. p. 385, t. 112.

Nicaragua, Omotépé island, lake of Nicaragua (*Wright*).—Colombia to Peru, Guiana and Brazil. Hb. Kew.

9. **Gymnogramme leptophylla,** Desv.; Hook. Sp. Fil. v. p. 136; Hook. et Grev. Ic. Fil. t. 25; Hook. et Bak. Syn. Fil. p. 383; Fourn. Mex. Pl. Enum. i. p. 73.

South Mexico, Chiapas &c. (*Ghiesbreght*, 301), region of Orizaba (*Bourgeau*, 2893), cordillera of Vera Cruz 3000 feet (*Galeotti*, 6294); Guatemala, Volcan de Fuego (*Godman & Salvin*).—Southward in the Andes to Ecuador; and very widely dispersed

in the temperate regions of the Old World, from Jersey and North India to South Africa and New Zealand. Hb. Kew.

10. **Gymnogramme (Selliguea) mexicana,** Bak. in Hook. et Bak. Syn. Fil. p. 387.

Selliguea mexicana, Fée, 5e Mém. Foug. p. 177; 7e Mém. p. 43, t. 10. fig. 4; Fourn. Mex. Pl. Enum. i. p. 71.

Gymnogramme salvinii, Hook. Sp. Fil. v. p. 157, et 2nd Cent. Ferns, t. 71.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 945); Guatemala, Volcan de Fuego (*Godman & Salvin*), Vera Paz (*Salvin*). Hb. Kew.

11. **Gymnogramme pedata,** Kaulf.; Hook. Sp. Fil. v. p. 131; Hook. et Bak. Syn. Fil. p. 383; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 339; Eaton in Proc. Am. Acad. xviii. p. 184.

Neurogramme pedata, Link, Fil. Hort. Berol. p. 139; Fée, 9e Mém. Foug. p. 13; Fourn. Mex. Pl. Enum. i. p. 71.

Bommeria pedata, Fourn. in Bull. Soc. Bot. France, xxvii. p. 327.

North Mexico, Sierra Madre (*Seemann*), mountains of San Rafael, San Luis Potosi (*Schaffner*, 960); South Mexico, Chiapas (*Ghiesbreght*, 315), valley of Mexico (*Bourgeau*, 750), San Felipe (*Andrieux*, 45), Comaltepec, Oaxaca (*Liebmann*); Guatemala (*Skinner*), Jocotenango (*Bernoulli*, 336). Hb. Kew.

12. **Gymnogramme (Leptogramme) pilosa,** Mart. et Gal. Foug. Mex. p. 27, t. 4. fig. 1; Liebm. Mexicos Bregner, p. 29; Hook. Sp. Fil. v. p. 141; Hook. et Bak. Syn. Fil. p. 376; Fourn. Mex. Pl. Enum. i. p. 73, cum var. β. excl. syn. Hook. et Grev.

Phegopteris pilosa, Mett. Phegopt. und Aspid. p. 18.

Gymnogramme procurrens, Fée, 8e Mém. Foug. p. 78.

South Mexico, peak of Orizaba 9700 to 10,000 feet (*Linden*, 47; *Galeotti*, 6267), Desierto Viejo &c., valley of Mexico (*Bourgeau*, 921, 1043: β. *major*, Fourn.), valley of Mexico (*Schmitz*). Hb. Kew.

13. **Gymnogramme pumila,** Spreng.; Hook. Sp. Fil. v. p. 126; Hook. et Bak. Syn. Fil. p. 379; Hook. 2nd Cent. Ferns, t. 8.

Hecistopteris pumila, J. Sm. in Hook. Lond. Journ. Bot. i. p. 193; Fée, Gen. Fil. p. 179, t. 16 B.

Guatemala, Yzabal (*Godman & Salvin*); Panama, Coiba (*Seemann*).—West Indies; Colombia; North Brazil. Hb. Kew.

14. **Gymnogramme rufa,** Desv.; Hook. Sp. Fil. v. p. 145; Hook. et Bak. Syn. Fil. p. 379.

Neurogramme rufa, Link, Fil. Hort. Berol. p. 138; Fourn. Mex. Pl. Enum. i. p. 71.

Hemionitis rufa, Swartz, Syn. Fil. pp. 20 et 210.

South Mexico, Santa Rosa, Guanajuato (*Humboldt & Bonpland*); Guatemala, without locality (*Skinner*); Nicaragua, near Granada (*Lévy*, 157); Panama (*Seemann*, 375).—West Indies to Peru and the Amazons Valley. Hb. Kew.

15. **Gymnogramme (Ceropteris) tartarea,** Desv.; Hook. Sp. Fil. v. p. 148; Hook. et Bak. Syn. Fil. p. 384; Fourn. Mex. Pl. Enum. i p. 72 partim; Eaton in Proc. Am. Acad. xviii. p. 184.

Ceropteris tartarea, Link, et *C. pallescens*, Fée, 9e Mém. Foug. p. 14.

Hemionitis dealbata, Willd. Sp. Pl. v. p. 131.

Gymnogramme dealbata, Link, Hort. Berol. ii. p. 52; Mart. et Gal. Foug. Mex. p. 28.

North Mexico, in the San Miguelito mountains, San Luis Potosi (*Schaffner*, 929); South Mexico, Mirador (*Liebmann*); Guatemala, without locality (*Skinner; Hartweg*); Nicaragua, near Granada (*Lévy*, 76); Costa Rica (*Harrison*).—West Indies to Peru and Brazil. Hb. Kew.

Fournier refers several collectors' numbers to this species which we find under *G. calomelanos*, in the Kew Herbarium.

16. **Gymnogramme (Ceropteris) trifoliata,** Desv.; Hook. Sp. Fil. v. p. 149; Hook. Gard. Ferns, t. 4; Hook. et Bak. Syn. Fil. p. 384.

Trismeria argentea, Fée, *T. aurea*, Fée, et *T. microphylla*, Fée, Gen. Fil. p. 165; Fourn. Mex. Pl. Enum. i. p. 71.

South Mexico, Hacienda de Tuspango (*Bourgeau*, 2359), Sierra San Pedro Nolasco &c. (*Jurgensen*); Guatemala, between San Antonio and San Bernardino (*Bernoulli*, 558), Dueñas (*Salvin & Godman*).—West Indies to Peru and Brazil. Hb. Kew.

35. MENISCIUM.

Meniscium, Schreb.; Hook. et Bak. Syn. Fil. p. 390, t. 6. fig. 54.

A Tropical genus of about ten species, widely diffused, though apparently not extending to Australia.

1. **Meniscium angustifolium,** Willd.; Hook. Sp. Fil. v. p. 164; Hook. et Bak. Syn. Fil. p. 391.

Guatemala, Yzabal (*Godman & Salvin*); Panama, Chagres (*Fendler*, 423), without locality (*Seemann*).—West Indies to Peru and Brazil. Hb. Kew.

2. **Meniscium reticulatum,** Swartz; Hook. Sp. Fil. v. p. 165; Hook. et Bak. Syn. Fil. p. 392.

Meniscium falcatum, Liebm. Mexicos Bregner, p. 31.

Meniscium sorbifolium, Willd.; Liebm. loc. cit. et Fourn. loc. cit. (species propria).

South Mexico, Chinantla, Oaxaca (*Liebmann*); Guatemala, Mazatenango (*Bernoulli*, 446); Panama, Chagres (*Fendler*, 404).—West Indies to Peru and Brazil. Hb. Kew.

3. **Meniscium serratum,** Cav.; Hook. Sp. Fil. v. p. 165; Hook. et Bak. Syn. Fil. 392.

Meniscium jurgensenii, Fée, 5e Mém. Foug. p. 233; Fourn. Mex. Pl. Enum. i. p. 73, excl. syn.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 917); Panama, Lion Hill (*S. Hayes*, 382).—West Indies to Peru and Brazil. Hb. Kew.

36. ANTROPHYUM.

Antrophyum, Kaulf.; Hook. et Bak. Syn. Fil. p. 392, t. 6. fig. 55.

A Tropical genus of about fifteen species generally spread, except Australia, but very rare in Africa.

1. **Antrophyum cayennense,** Kaulf.; Hook. Sp. Fil. v. p. 171; Hook. et Bak. Syn. Fil. p. 394; Fourn. in Bull. Soc. Bot. France, xix. p. 250.

NICARAGUA, Chontales (*Lévy*, 1448).—GUIANA and AMAZONS VALLEY.

Included on the authority of Fournier, but probably the same as Godman and Salvin's specimens from Guatemala referred to *A. subsessile*, for the two species are very closely allied.

2. **Antrophyum ensiforme,** Hook. Sp. Fil. v. p. 174; Hook. Ic. Pl. t. 174, Ic. Fil. t. 394, et 2nd Cent. Ferns, t. 70; Hook. et Bak. Syn. Fil. p. 393.

Antrophyum galeottii, Fée, Antroph. p. 51, t. 5. fig. 4; Fourn. Mex. Pl. Enum. i. p. 70.
Antrophyum falcatum, Mart. et Gal. Foug. Mex. p. 49, t. 12, non Blume.
Antrophyum discoideum, Liebm. Mexicos Bregner, p. 25, non Kunze.
Scoliosorus ensiformis, Thos. Moore, Ind. Fil.

SOUTH MEXICO, Huitamalco, Vera Cruz (*Liebmann*: *discoideum*, Liebm.), Chiapas &c. (*Ghiesbreght*, 218), Cumbre de Totontepec 10,000 feet (*Hartweg*, 522); GUATEMALA, without locality (*Skinner*), Chilasco (*Godman & Salvin*), mountains of Vera Paz (*Salvin*). Hb. Kew.

3. **Antrophyum lanceolatum,** Kaulf.; Hook. Sp. Fil. v. p. 176; Hook. et Bak. Syn. Fil. p. 394; Fourn. Mex. Pl. Enum. i. p. 70.

Loxogramme lanceolata, Presl; Hook. Gen. Fil. t. 73 B.
Antrophyum pumilum, Fourn. loc. cit. non Kaulf.
Antrophyum feei, Schaffner; Fée, 7^e^ Mém. Foug. p. 42, t. 22. fig. 1.

SOUTH MEXICO, Vera Cruz to Orizaba (*Müller*), around Mexico (*Schmitz*); GUATEMALA (*Skinner*), Yzabal (*Godman & Salvin*), mountains of Vera Paz (*Salvin*); NICARAGUA, Chontales (*Tate*, 66; *Lévy*, 1482).—WEST INDIES; COLOMBIA. Hb. Kew.

4. **Antrophyum lineatum,** Kaulf.; Hook. Sp. Fil. v. p. 175; Hook. et Bak. Syn. Fil. p. 392; Fourn. Mex. Pl. Enum. i. p. 70; Liebm. Mexicos Bregner, p. 26.

Polytænium lanceolatum, Desv. Journ. de Bot. i. p. 218.
Loxogramme lineata, Presl.

SOUTH MEXICO, Mirador 3000 feet (*Liebmann*), around the city of Mexico (*Schmitz*); GUATEMALA, mountains of Vera Paz (*Salvin*); NICARAGUA (*Lévy*, 1483).—WEST INDIES to ECUADOR and BRAZIL. Hb. Kew.

5. **Antrophyum subsessile,** Kunze, Anal. Pterid. p. 29, t. 19. fig. 1; Hook. Sp. Fil. v. p. 171; Hook. et Bak. Syn. Fil. p. 394.

GUATEMALA, Choctum (*Godman & Salvin*).—CUBA to PERU. Hb. Kew.

37. VITTARIA.

Vittaria, Smith; Hook. et Bak. Syn. Fil. p. 395, et ed. 2, p. 517, t. 6. fig. 56.

An almost exclusively tropical genus of about a dozen species, generally spread.

1. **Vittaria (Tæniopsis) lineata,** Swartz; Hook. Sp. Fil. v. p. 180; Hook. et Bak. Syn. Fil. p. 396; Fourn. Mex. Pl. Enum. i. p. 114; Eaton, Ferns N. Am. i. p. 289, t. 38. figg. 4–8.

Vittaria graminifolia, Kaulf. Enum. Fil. p. 192; Liebm. Mexicos Bregner, p. 79; Fourn. loc. cit. (species propria).

Vittaria angustifrons, Mich. Fl. Bor.-Am. ii. p. 261.

Tæniopsis lineata, J. Sm. in Hook. Journ. Bot. iv. 1842, p. 67.

Tænitis linearis, Mart. et Gal. Foug. Mex. p. 44.

Vittaria filifolia, Fée, Vittar. p. 20, t. 3. fig. 6; Hook. Sp. Fil. v. p. 182.

Florida.—South Mexico, Zacuapan (*Leibold*), Mirador and Llano Verde (*Galeotti*, 6337, 6418), Santa Aña region of Orizaba (*Bourgeau*, 3069), Chiapas (*Ghiesbreght*, 255, 270); Guatemala, Volcan de Fuego (*Godman & Salvin*), Chilion near Mazatenango (*Bernoulli*, 439).—West Indies to Peru and Brazil; also in the Old World, from the Himalayas and Japan to the Malay Archipelago and Southern Africa. Hb. Kew.

2. **Vittaria (Tæniopsis) scabrida,** Klotzsch.; Hook. Sp. Fil. v. p. 182; Hook. et Bak. Syn. Fil. p. 395.

South Mexico (*Schiede*, ex *Hooker*).—Guiana; Brazil.

We have not seen any Mexican specimens of this species.

38. TÆNITIS.

Tænitis, Swartz; Hook. et Bak. Syn. Fil. p. 396, t. 6. fig. 57.

A tropical genus of five species, as limited in the 'Synopsis Filicum,' restricted, as far as known, to America, Polynesia, and Asia.

1. **Tænitis angustifolia,** R. Br.; Hook. Sp. Fil. v. p. 187; Hook. et Bak. Syn. Fil. p. 396.

Pteropsis angustifolia, Desv.; Fée, Vittar. p. 24, non Fourn. Mex. Pl. Enum. i. p. 86.

Vittaria costata, Kunze, Anal. Pterid. p. 29, t. 18. fig. 2; Fourn. in Bull. Soc. Bot. France, xix. p. 258.

Guatemala, Yzabal (*Godman & Salvin*), Mazatenango (*Bernoulli*, 36); Nicaragua, Chontales (*Tate*, 67; *Lévy*, 1418); Panama, Lion Hill (*S. Hayes*, 366).—West Indies to Brazil and in the Galapagos. Hb. Kew.

By some unaccountable error Fournier has confused the synonymy of this plant and the wholly different *Polypodium angustum.*

2. **Tænitis furcata,** Willd.; Hook. Sp. Fil. v. p. 118; Hook. et Bak. Syn. Fil. p. 397.

Cuspidaria furcata, Fée, et *C. semipinnatifida,* Fée, Gen. Fil. p. 88, t. 8 A.
Dicranoglossum furcatum, J. Sm. ex Hook.

NICARAGUA, Chontales (*Tate*, 63; *Lévy*, 480); PANAMA, Chagres (*Fendler*, 387), Coiba Isl. and near San Juan (*Seeman*, 26).—WEST INDIES to ECUADOR and BRAZIL. Hb. Kew.

3. **Tænitis lanceolata,** R. Br.; Hook. Sp. Fil. v. p. 186; Hook. et Bak. Syn. Fil. p. 397.

Pteropsis lanceolata, Desv.; Hook. Fil. Exot. t. 45.
Drymoglossum lanceolatum, J. Sm. in Hook. Journ. Bot. iv. p. 66, excl. Syn. Schkuhr, teste Hook.
Paltonium lanceolatum, Presl, Epimel. Bot. p. 156.
Neurodium lanceolatum, Fee, Gen. Fil. p. 93, t. 8 c.

BRITISH HONDURAS, Nicholas Bay, Belize (*Skinner*).—BAHAMAS to CUBA. Hb. Kew.

39. HEMIONITIS.

Hemionitis, Linn.; Hook. et Bak. Syn. Fil. p. 398, et ed. 2, p. 518, t. 6. fig. 59.

Almost confined to the tropics, and hitherto not recorded from either Africa or Australia. Nine species are described in the 'Synopsis Filicum.'

1. **Hemionitis (Anetium) citrifolia,** Hook. Sp. Fil. v. p. 193; Hook. et Bak. Syn. Fil. p. 399.

Anetium citrifolium, Splitg.; Fourn. in Bull. Soc. Bot. France, xix. p. 250.

NICARAGUA, Chontales (*Lévy*, 1462).—WEST INDIES to NORTH BRAZIL.

2. **Hemionitis hederæfolia,** J. Sm. in Seem. Bot. Voy. 'Herald,' p. 339; Hook. et Bak. Syn. Fil. p. 398.

MEXICO, without locality (*Leibold*). Hb. Kew.

3. **Hemionitis levyi,** Fourn. in Bull. Soc. Bot. France, xvii. p. 237, et xix. p. 251.

NICARAGUA, island of Omotépé in the lake of Nicaragua (*Lévy*, 1157).

4. **Hemionitis palmata,** Linn.; Hook. Sp. Fil. v. p. 192; Hook. et Bak. Syn. Fil. p. 398; Hook. Exot. Fl. t. 53; Liebm. Mexicos Bregner, p. 25; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 339; Fourn. Mex. Pl. Enum. i. p. 71.

Gymnogramme palmata, Link. Hort. Berol. ii. p. 49: Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 295.

NORTH MEXICO, Sierra Madre (*Seemann*, 1938); SOUTH MEXICO, valley of Cordova (*Bourgeau*, 1428), Vera Cruz to Orizaba (*Müller*, 2197), Misantla (*Liebmann*), Chiapas (*Ghiesbreght*, 388); GUATEMALA (*Skinner*), San Gerónimo (*Godman & Salvin*).—WEST INDIES to PERU. Hb. Kew.

5. **Hemionitis pinnatifida,** Bak. in Hook. et Bak. Syn. Fil. p. 399; Kuhn in Bot. Zeit. 1869, p. 144.

GUATEMALA (*Bernoulli*, 32); COSTA RICA (*Wendland*, 438). Sketch only in Herb. Kew.

Tribe XIII. ACROSTICHEÆ.

This tribe is limited to the genera *Acrostichum* and *Platycerium*; the latter consists of about half a dozen species widely spread in the tropics of the Old World; and one apparently unpublished species has been found in Peru and Bolivia.

40. ACROSTICHUM.

Acrostichum, Linn.; Hook. et Bak. Syn. Fil. p. 399, et ed. 2, p. 518, tt. 7 et 8. fig. 60.

About 170 species, generally dispersed in warm regions, but by far most numerous in Tropical America. Quite rare in temperate regions.

The species in the following enumeration without an intercalated sectional name, all, or nearly all, belong to *Elaphoglossum*.

1. **Acrostichum (Gymnopteris) alienum,** Swartz; Hook. Sp. Fil. v. p. 272; Hook. et Bak. Syn. p. 419; Hook. Gen. Fil. t. 85, sub *Gymnopteride*.

Gymopteris aliena, Presl; *G. portoricensis*, Fée; *G. irregularis*, Fourn., et *G. hastata*, Fourn. Mex. Pl. Enum. pp. 69 et 70 (species propriæ).

Acrostichum umbrosum, Liebm., *A. irregulare*, Liebm., et *A. hastatum*, Liebm. Mexicos Bregner, pp. 20–22.

Chrysodium umbrosum, Mett. ex Hook.

Anapausia aliena, Presl, Epimel. Bot. p. 187; Thos. Moore, Ind. Fil.

SOUTH MEXICO, Mirador (*Liebmann: portoricensis*, ex Fourn.), Chiapas &c. (*Ghiesbreght*, 407, 409), Hacienda de Jovo (*Liebmann: hastata*, ex Fourn.), Chiquihite (*Bourgeau*, 2147: *irregularis*, ex Fourn.), Chiapas &c. (*Ghiesbreght*, 370: *hastata*, ex Fourn.), Oaxaca 2000 feet (*Galeotti*, 6572); GUATEMALA (*Skinner*); SALVADOR, Sonsonati (*Skinner*); NICARAGUA, near Granada (*Lévy*, 301: *irregularis*, ex Fourn.), Chontales (*Seemann*, 224); PANAMA. Veraguas (*Seemann*).—CUBA to PERU and the VALLEY of the AMAZONS. Hb. Kew.

2. **Acrostichum (Chrysodium) aureum,** Linn.; Hook. Sp. Fil. v. p. 266; Hook. et Bak. Syn. Fil. p. 423; Ch. et Schl. in Linnæa, v. p. 605; Eaton, Ferns N. Am. ii. p. 93, t. 58; Liebm. Mexicos Bregner, p. 20.

Chrysodium vulgare, Fée, Acrost. p. 97; Fourn. Mex. Pl. Enum. i. p. 69.

Acrostichum obliquum, A. rigens, A. cayennense, A. durvillei, A. sculpturatum, A. danæfolium, A. formosum, A. marginatum, A. inæquale, A. speciosum, A. fraxinifolium, et *A. crassifolium*, Presl, Epimel. Bot. pp. 179–183.

Chrysodium hirsutum, C. inæquale, C. cayennense, C. durvillei, C. sculpturatum, C. speciosum, C. fraxinifolium, et *C. danæfolium*, Fée, Acrost. pp. 97–101, tt. 59–62.

FLORIDA.—SOUTH MEXICO, Los Baños (*Heller*), Chiquihite (*Bourgeau*), Tecoluta (*Schiede*); GUATEMALA, without locality (*Skinner*); NICARAGUA, near Granada (*Lévy*, 15);

Panama, Chagres (*Fendler*, 396).—Bermudas and West Indies to Peru and South Brazil; and widely spread in the Tropical and Subtropical Regions of the Old World. Hb. Kew.

3. **Acrostichum auricomum,** Kunze; Fée, Acrost. p. 59; Hook. Sp. Fil. v. p. 239; Hook. et Bak. Syn. Fil. p. 410.

Acrostichum laminarioides, Fourn. Mex. Pl. Enum. i. p. 67, saltem pro parte et excl. syn. non Fée.

South Mexico, valley of Cordova and Santa Alta region of Orizaba (*Bourgeau*, 2110, 3060 bis: *laminarioides α. longipes*, ex Fourn.).—Colombia to Peru. Hb. Kew.

4. **Acrostichum bellermannianum,** Klotzsch in Linnæa, xx. p. 426; Fourn. Mex. Pl. Enum. i. p. 67.

South Mexico, Coatepec near Jalapa (*Hahn*).—Colombia to Ecuador.

There is nothing in the Kew Herbarium identified with this species.

5. **Acrostichum (Polybotrya) caudatum,** Hook. Sp. Fil. v. p. 244 (non *A. caudatum*, Hook. Ic. Pl. t. 215, teste Hook.); Hook. et Bak. Syn. Fil. p. 414.

Polybotrya caudata, Kunze in Linnæa, ix. p. 23; Fée, Acrost. p. 72, t. 34.

Nicaragua, Chontales (*Tate*, 456); Panama, Lion Hill (*S. Hayes*, 361).—West Indies to Peru and Brazil. Hb. Kew.

6. **Acrostichum (Olfersia) cervinum,** Swartz; Hook. Sp. Fil. v. p. 254; Hook. et Bak. Syn. Fil. p. 416; Liebm. Mexicos Bregner, p. 23.

Olfersia cervina, Kunze; Hook. Fil. Exot. t. 43; Fourn. Mex. Pl. Enum. i. p. 69.
Polybotrya cervina, Kaulf. Enum. Fil. p. 55.
Dorcapteris cervina, Presl, Epimel. Bot. p. 167.

South Mexico, Hacienda de Jovo and Barranca de Huitamalco (*Liebmann*).—West Indies to Peru and South Brazil. Hb. Kew.

7. **Acrostichum (Soromanes) cœnopteris,** Kunze; Hook. Sp. Fil. v. p. 256; Hook. et Bak. Syn. Fil. p. 417.

Soromanes integrifolium, Fée, et *S. serratifolium,* Fée, Acrost. p. 82, tt. 42 et 43.

Mexico (*Galeotti*, ex *Fée*).—Venezuela southward to Brazil.

8. **Acrostichum conforme,** Swartz; Hook. Sp. Fil. v. p. 198; Hook. et Bak. Syn. Fil. p. 401.

Elaphoglossum conforme, Schott, *β angustatum,* Thos. Moore, Ind. Fil. p. 354.
Acrostichum longifolium, Fourn. Mex. Pl. Enum. i. p. 63, pro parte.
Acrostichum schaffneri, Fée, ex Fourn. loc. cit. p. 64.
Acrostichum blepharodes, Fée, 9e Mém. p. 2, partim ex Fourn.
Acrostichum affine, Mart. et Gal. Foug. Mex. p. 24, t. 3. fig. 1; Liebm. Mexicos Bregner, p. 13; Fourn. loc. cit. p. 65; Hook. Sp. Fil. v. p. 217.
Acrostichum unitum, Bory in Fée, Acrost. p. 44.

North Mexico, Sierra Madre (*Seemann*, 1939), San Luis Potosi (*Schaffner*, 953); South Mexico, Chiapas &c. (*Ghiesbreght*, 269); Guatemala, summit of Volcan de Fuego

(*Godman & Salvin*); Panama, Aspinwall (*S. Hayes*, 151).—West Indies to Chili and South Brazil; also widely spread in the warmer parts of Asia, Africa, Australia, and Polynesia, and occurring in such remote islands as St. Helena and Tristan da Cunha. Hb. Kew.

We have given the extended synonymy, including *A. affine*, suggested by Mr. Baker, without including any of the localities or numbers, cited under the various forms by Fournier, which we have not seen.

9. **Acrostichum (Chrysodium) crinitum,** Linn.; Hook. Sp. Fil. v. p. 267; Hook. et Bak. Syn. Fil. p. 421; Hook. et Grev. Ic. Fil. t. 1; Hook. Fil. Exot. t. 6.
Hymenodium crinitum, Fée, Acrost. p. 90.

Mexico (*Galeotti*, ex *Hooker*).—West Indies.

There are no Mexican specimens of this remarkably distinct fern in the Kew Herbarium, and we have not seen Galeotti's 6295, which Martens and Galeotti refer to *A. crinitum*, and Fée to *A. blepharodes*, Fée, which Baker would reduce to *A. hybridum*.

[*A. flaccidum*, Fée, is incorrectly recorded from Panama in the 'Synopsis Filicum'; it should be Cape Corrientes.]

10. **Acrostichum (Elaphoglossum) glaucum,** Fée, 8e Mém. Foug. p. 67, et 10e Mém. p. 4, t. 28. fig. 1; Fourn. Mex. Pl. Enum. i. p. 65.
Elaphoglossum glaucum, Thos. Moore, Ind. Fil.

South Mexico, Orizaba (*Müller*), Cordova (*Schaffner*), Cofre de Perote (*Hahn*).

11. **Acrostichum gratum,** Fée, 8e Mém. Foug. p. 69, et 10e Mém. p. 5, t. 30. fig. 2 (et non fig. 1, menda typographica), ex Fourn. Mex. Pl. Enum. i. p. 66; Eaton in Proc. Am. Acad. xviii. p. 183.

North Mexico, in the San Miguelito mountains and elsewhere, San Luis Potosi (*Schaffner*, 953; *Parry & Palmer*, 1007); South Mexico, Desierto Viejo (*Bourgeau*, 920), Popocatepetl, 7800 feet (*Schaffner*). Hb. Kew.

12. **Acrostichum (Elaphoglossum) guatemalense,** Klotzsch in Otto and Dietr. Allg. Gart. Zeit. 1855, p. 66.

Described from cultivated specimens raised from spores said to have been received from Guatemala.

13. **Acrostichum hybridum,** Bory; Hook. Sp. Fil. v. p. 210; Hook. et Bak. Syn. Fil. p. 403; Hook. et Grev. Ic. Fil. t. 21; Liebm. Mexicos Bregner, p. 15.
Acrostichum mexicanum, Fourn. Mex. Pl. Enum. i. p. 63.
Acrostichum blepharodes, Fée, Acrost. p. 48, t. 24. fig. 3; Fourn. loc. cit. p. 64 (species propria).
Acrostichum crinitum, Mart. et Gal. Foug. Mex. p. 25, non Swartz.

South Mexico, Barranca de Chinantla 7000 feet (*Liebmann: mexicanum*, Fourn.), Zacuapan (*Galeotti*, 6297).—Venezuela to Brazil, and Africa and its islands, including Tristan da Cunha. Hb. Kew.

A. bourgæanum, Fourn. loc. cit. p. 64. t. 1, founded upon a plant sent from Mexico by Bourgeau and cultivated in the Paris Garden of Plants, Mr. Baker thinks referable to this species.

14. **Acrostichum latifolium,** Swartz; Hook. Sp. Fil. p. 202; Hook. et Bak. Syn. Fil. p. 403.

Acrostichum andicola, Fée, Acrost. p. 28, t. 2; Fourn. Mex. Pl. Enum. i. p. 65.
Acrostichum lingua, Mart. et Gal. Foug. Mex. p. 24; Liebm. Mexicos Bregner, p. 14, non Raddi.
Acrostichum alismæfolium, Fée, loc. cit. t. 3; Fourn. loc. cit. (species propria).
Acrostichum impressum, Fée, loc. cit. p. 33, t. 5. fig. 3; Fourn. loc. cit. (species propria).
Acrostichum longifolium, Jacq.; Fourn. Mex. Pl. Enum. i. p. 63.
Aconiopteris longifolia, Fée, Acrost. p. 80, t. 41.
Elaphoglossum longifolium, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 337.
Acrostichum simplex, Mart. et Gal. Foug. Mex. p. 21, non Swartz.
Acrostichum scapellum, Fée, 9e Mém. Foug. p. 1, partim teste Fourn.
Acrostichum sartorii, Liebm. Mexicos Bregner, p. 14.

South Mexico, Llano Verde, Oaxaca 6900 feet (*Galeotti*, 6342: *andicola*, Fourn.), Mirador (*Liebmann: sartorii*), Azul (*Bourgeau*, 3148), Chiapas &c. (*Ghiesbreght*, 251); Guatemala, Chilasco (*Godman & Salvin*).—West Indies to Peru and Brazil. Hb. Kew.

15. **Acrostichum lepidotum,** Willd.; Hook. Sp. Fil. v. p. 238; Hook. et Bak. Syn. Fil. p. 409.

Acrostichum squamatum, Fourn. Mex. Pl. Enum. i. p. 67.
Acrostichum roezlii, Schaffner in Fée, 8e Mém. Foug. p. 69, et 10e Mém. p. 7, t. 30. fig. 1 (non fig. 2, menda typographica), ex Fourn.
Acrostichum callolepis, Fée, 8e Mém. Foug. p. 69.
Acrostichum rufescens, Liebm. Mexicos Bregner, p. 18.
Acrostichum vestitum, Ch. et Schl. in Linnæa, v. p. 605; Liebm. loc. cit. p. 18; Fourn. loc. cit. p. 68 (species propria).
Acrostichum fulvum, Mart. et Gal. Foug. Mex. p. 24, t. 3. fig. 2.

South Mexico, Orizaba 3000 feet (*Galeotti*, 6459: *fulvum*), same locality at 10,000 to 11,000 feet (*Liebmann: rufescens*).—West Indies to Peru. Hb. Kew.

The synonymy of *A. lepidotum*, Willd., and *A. squamosum*, Cav., is so variously given by different writers that it is impossible for us to draw the line with any degree of certainty. We have, however, abstained from citing any of the localities recorded by Fournier which we are unable to verify.

16. **Acrostichum lindeni,** Bory; Hook. Sp. Fil. v. p. 223; Hook. et Bak. Syn. Fil. p. 404; Fourn. Mex. Pl. Enum. i. p. 64; Fée, Acrost. p. 48, t. 24. fig. 3.

Acrostichum pumilum, Mart. et Gal. Foug. Mex. p. 23.
Acrostichum venustum, Liebm. Mexicos Bregner, p. 16.
Acrostichum liebmannii, Thos. Moore, Ind. Fil.

South Mexico, peak of Orizaba 9000 to 10,000 feet (*Linden*, 52; *Galeotti*, 6263: *Liebmann*).—Southward to Ecuador and Brazil. Hb. Kew.

The synonymy of this, as given above, may be both incomplete and incorrect as far as the names of Mexican forms are concerned, for, in the 'Species Filicum,' *A. blepharodes*, Fée, and *A. crinitum*, Mart. et Gal., are cited under *A. lindeni*.

17. **Acrostichum lineare,** Fée, Acrost. t. 15. fig. 2; Hook. Sp. Fil. v. p. 221; Hook. et Bak. Syn. Fil. p. 406.

GUATEMALA, Chilasco (*Godman & Salvin*).—BRAZIL. Hb. Kew.

18. **Acrostichum siloense,** Hook. Sp. Fil. v. p. 229; Hook. Ic. Pl. t. 657; Hook. et Bak. Syn. Fil. p. 405.

SOUTH MEXICO, Mirador (*Liebmann*); GUATEMALA, Volcan de Agua (*Godman & Salvin*). COLOMBIA to PERU. Hb. Kew.

19. **Acrostichum lonchophyllum,** Fée, 8e Mém. Foug. p. 68; Fourn. Mex. Pl. Enum. i. p. 65; Hook. et Bak. Syn. Fil. ed. 2, p. 549.

SOUTH MEXICO, Orizaba (*Bourgeau*, 2888), Huatusco (*Schaffner*). Hb. Kew.

20. **Acrostichum matthewsii,** Fée, Acrost. p. 54, t. 2. fig. 2; Hook. Sp. Fil. v. p. 230; Hook. et Bak. Syn. Fil. p. 408.

Acrostichum hartwegii, Fée, loc. cit. p. 53, t. 9. fig. 2.
Acrostichum lepidotum, Fourn. Mex. Pl. Enum. i. p. 67, vix Willd.
Acrostichum muscosum, Mart. et Gal. Foug. Mex. p. 22?
Elaphoglossum hartwegii, Thos. Moore, Ind. Fil.

SOUTH MEXICO, peak of Orizaba 9500 to 11,000 feet (*Galeotti*, 6265).—COLOMBIA to PERU.

There is probably some confusion here; the Mexican plant is included on the authority of Moore.

21. **Acrostichum melanopus,** Kunze; Mett. Fil. Lips. p. 19, t. 1; Hook. et Bak. Syn. Fil. p. 403; Fourn. in Bull. Soc. Bot. France, xix. p. 249.

Acrostichum attenuatum, Fée, 5e Mém. Foug. p. 23, t. 1. fig. 1, ex Fourn.

NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Popocatepetl (*Schaffner*); NICARAGUA, without locality (*Lévy*, 1507).—VENEZUELA.

All the localities within our limits given on the authority of Fournier.

22. **Acrostichum muelleri,** Fourn. Mex. Pl. Enum. i. p. 68, t. 1. fig. 2; Hook. et Bak. Syn. Fil. ed. 2, p. 522.

SOUTH MEXICO, near Orizaba (*Müller*, 41, in part).

["*Acrostichum nanum*, Liebm. (Mexicos Bregner, p. 19), non Fée, est species junior hujusce generis," *Fournier*.]

23. **Acrostichum nudum,** Kunze ex Fourn. Mex. Pl. Enum. i. p. 66.

Acrostichum gayanum, Fée, Acrost. p. 37, t. 19. fig. 2; Rémy in Gay, Fl. Chil. vi. p. 475.
Acrostichum leptophyllum, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 285.
Acrostichum simplex, Mart. et Gal. Foug. Mex. p. 21, partim.; Fée, Acrost. p. 36; Hook. Sp. Fil. v. p. 205, excl. var. β ex Fourn.
Acrostichum tenuifolium, Liebm. Mexicos Bregner, p. 11.

North Mexico, San Rafael (*Guillemin*); South Mexico, woods on the eastern cordillera (*Galeotti*, 6304), Popocatepetl (*Schaffner*), Sierra Yavezia (*Galeotti*, 6345). Cerro de Sempoaltepec (*Liebmann*).

The synonymy and distribution is wholly from Fournier, though we may have the very same forms under some other species.

24. **Acrostichum obscurum**, Fourn. Mex. Pl. Enum. i. p. 68.

South Mexico, Misantla (*Hahn*).

25. **Acrostichum (Rhipidopteris) peltatum**, Swartz; Hook. Sp. Fil. v. p. 252; Hook. et Bak. Syn. Fil. p. 416; Mart. et Gal. Foug. Mex. p. 26; Liebm. Mexicos Bregner, p. 19.

Rhipidopteris peltata, Schott; Fée, 5e Mém. Foug. p. 49, t. 2 A; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 338; Fourn. Mex. Pl. Enum. i. p 69.

South Mexico, region of Orizaba (*Bourgeau*, 3158; *Müller*, 2221), Sierra San Pedro Nolasco &c. (*Jurgensen*, 674), Jalapa 4000 feet (*Galeotti*, 6319: *Hahn*), Yavezia &c., Oaxaca 5000 to 7000 feet (*Galeotti*, 6341, 6546), Mirador (*Linden*), Teotalcingo, Oaxaca (*Liebmann*), Huatusco (*Schmitz*), Chiapas &c. (*Ghiesbreght*, 397); Guatemala (*Skinner*), Chilasco (*Godman & Salvin*).—West Indies to Peru and Brazil. Hb. Kew.

26. **Acrostichum pilosum**, H. B. K.; Hook. Sp. Fil. v. p. 241; Hook. et Bak. Syn. Fil. p. 406; Fourn. Mex. Pl. Enum. i. p. 67.

South Mexico, San Felipe, near Oaxaca, and Toluca (*Andrieux*, 31, 32).—Colombia. Hb. Kew.

[Under the name *A. preslianum*, Fée, syn. *A. ciliatum*, Presl, Fournier, including his citations, has a mixture of that species and *A. simplex*, Swartz, and *A. flaccidum*, Fée; the figure in Hooker and Bauer's 'Genera Filicum,' t. 105, being, as Mr. Baker informs us, *A. flaccidum* and not *A. simplex*. *A. ciliatum* is totally different from both of the others, and only *A. simplex* occurs within our limits.]

27. **Acrostichum recognitum**, Kunze; Fourn. Mex. Pl. Enum. i. p. 67; Hook. et Bak. Syn. Fil. ed. 2, p. 520.

Acrostichum setosum, Liebm. Mexicos Bregner, p. 17.

South Mexico, Barranca de Huitamalca, Puebla (*Liebmann*).—Andes of Quito. Hb. Kew.

28. **Acrostichum (Elaphoglossum) salvini**, Baker, n. sp.

"*A.* rhizomate breviter repente, paleis parvis lanceolatis nigro-castaneis vestito; fronde sterili lanceolato acuto basi cuneato utrinque paleis ovatis minutis membranaceis ferrugineis profunde fimbriatis tenuiter vestito, venis perspicuis adscendentibus simplicibus vel furcatis, stipite elongato paleis parvis lanceolatis membranaceis pallide ferrugineis prædito; fronde fertili multo minore stipite longiore.

"Lamina sterilis 4–6 poll. longa, medio 10–12 lineas lata, stipite 3–5-pollicari.

"Ad *A. viscosum*, Swartz, accedit."—*Baker, MSS.*

Guatemala, Volcan de Fuego (*Godman & Salvin*, 54, 226). Hb. Kew.

[Fournier doubtingly refers a fern from Vera Cruz, collected by Schaffner, to *A. scandens*, Fee, which is reduced to *A. lingua*, Raddi, in the 'Synopsis Filicum,' a species of which there are no specimens from within our limits in the Kew Herbarium.]

29. **Acrostichum scolopendrifolium,** Raddi; Hook. Sp. Fil. ii. p. 211; Hook. et Bak. Syn. Fil. p. 407.

Acrostichum erinaceum, Fée, Acrost. p. 41; Fourn. Mex. Pl. Enum. i. p. 64, excl. syn. Hook. et Grev.

Acrostichum nitidum, Liebm. Mexicos Bregner, p. 16, ex Fourn.

South Mexico, Huatusco (*Schaffner*), Barranca de Chinantla, Puebla (*Liebmann*); Guatemala, without locality (*Skinner*); Panama, Boquete, Veraguas (*Seemann*, 1551).—Andes; South Brazil. Hb. Kew.

The Mexican localities are from Fournier, and may belong to the true *A. hybridum.*

30. **Acrostichum (Chrysodium) serratifolium,** Mart.; Hook. Sp. Fil. v. p. 263; Hook. et Bak. Syn. Fil. ed. 2, p. 423.

Heteroneuron serratifolium, Fée, Acrost. p. 94, t. 55; Fourn. Mex. Pl. Enum. i. p. 69.

South Mexico, valley of Cordova (*Bourgeau*, 2008).—Venezuela to Peru and Brazil. Hb. Kew.

31. **Acrostichum simplex,** Swartz; Hook. Sp. Fil. v. p. 205; Hook. et Bak. Syn. Fil. p. 400.

South Mexico, Chiapas &c. (*Ghiesbreght*, 305), Vera Cruz to Orizaba (*Müller*, 31), peak of Orizaba 10,000 feet (*Liebmann*), Oaxaca (*Galeotti*, 6548).—Cuba to Brazil. Hb. Kew.

32. **Acrostichum (Stenochlæna) sorbifolium,** Linn.; Hook. Sp. Fil. v. p. 241; Hook. et Bak. Syn. Fil. p. 412.

Lomariopsis erythrodes, Fée, et *L. recurvata,* Fée, Acrost. pp. 67 et 68, t. 28; Fourn. Mex. Pl. Enum. i. p. 70 (species propriæ).

Lomariopsis vestita, Fourn. in Bull. Soc. Bot. France, xix. p. 250.

Lomaria sorbifolia, Fée, 9e Mém. Foug. p. 3.

Olfersia speciosa, Klotzsch ex Fourn.

South Mexico, Teapa (*Linden: recurvata*), eastern cordillera (*Galeotti; Hahn*, 56: *erythrodes*); Guatemala, Motagua valley (*Godman & Salvin*); Nicaragua, Chontales (*Tate*; *Lévy*, 476: *vestita*); Panama, Lion Hill (*S. Hayes*, 379).—West Indies to Peru and South Brazil; also ranging widely in Polynesia, Africa, Mascarene Islands, Malaya, and Cochin China. Hb. Kew.

33. **Acrostichum spathulatum,** Bory; Hook. et Bak. Syn. Fil. p. 408.

Acrostichum piloselloides, Presl, Reliq. Hænk. i. p. 14, t. 11; Hook. Sp. Fil. v. p. 227; Hook. Fil. Exot. t. 39; Fée, Acrost. p. 51, t. 14. fig. 6; Mart. et Gal. Foug. Mex. p. 22; Fourn. Mex. Pl. Enum. i. p. 68.

Acrostichum pumilum, Mart. et Gal. loc. cit.p. 23, t. 2. fig. 2, teste Hook.

Acrostichum jamesoni, Hook. et Grev. Ic. Fil. t. 80; Fourn. loc. cit. (species propria).

South Mexico, region of Orizaba (*Bourgeau*, 3072; *Müller*, 37, 38), Volcan de Colima 4000 feet (*Galeotti*, 6434), Cordillera of Oaxaca 1500 feet (*Galeotti*, 6355); Guatemala (*Skinner*), Volcan de Fuego (*Godman & Salvin*).—Cuba to Peru and Brazil; Tristan da Cunha; Mascarene Islands; Ceylon. Hb. Kew.

34. **Acrostichum squamipes,** Hook. Sp. Fil. v. p. 228; Hook. et Bak. Syn. Fil. p. 404; Hook. Ic. Fil. t. 197; Fourn. Mex. Pl. Enum. i. p. 67; Fée, Acrost. p. 53, t. 22. fig. 2.

Acrostichum ovatum, Liebm. Mexicos Bregner, p. 12, non Hook.
Acrostichum revolutum, Liebm. loc. cit. p. 11?; Fourn. loc. cit. p. 65 (species propria).
Elaphoglossum revolutum, Thos. Moore, Ind. Fil.
Acrostichum humile, Mett. in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 284?

South Mexico, Cerro de Sempoaltepec, Oaxaca, 8000 to 9000 feet (*Liebmann*), near Lobani and Petlapa, Chinantla 3000 feet (*Liebmann: revolutum*).—Colombia; Brazil: Peru. Hb. Kew.

35. **Acrostichum squamosum,** Swartz; Hook. Sp. Fil. v. p. 239; Hook. et Bak. Syn. Fil. p. 411.

Acrostichum hirtum, Swartz ex Hook. an Fourn. Mex. Pl. Enum. i. p. 68?

Guatemala, Volcan de Fuego (*Godman & Salvin*).—West Indies to Ecuador and North Brazil; also widely dispersed in the warmer parts of Africa, Asia, and Polynesia. Hb. Kew.

Fournier records two or three Mexican localities for *A. hirtum.*

36. **Acrostichum squarrosum,** Klotzsch; Hook. Sp. Fil. v. p. 224; Hook. et Bak. Syn. Fil. p. 405; Fourn. Mex. Pl. Enum. i. p. 66.

South Mexico, Chiapas (*Linden*); Guatemala, Chilasco (*Godman & Salvin*).—Colombia. Hb. Kew.

37. **Acrostichum tambillense,** Hook. Sp. Fil. v. p. 207; Hook. Ic. Pl. t. 856; Hook. et Bak. Syn. Fil. p. 400.

Guatemala, Volcan de Fuego (*Godman & Salvin*).—Ecuador. Hb. Kew.

38. **Acrostichum tatei,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 518.

Nicaragua, Chontales (*Tate*, 131). Hb. Kew.

39. **Acrostichum tectum,** Willd.; Hook. et Bak. Syn. Fil. p. 410.

Acrostichum rubiginosum, Fée, Acrost. p. 47, t. 5. fig. 1; Hook. Sp. Fil. v. p. 222.
Acrostichum venustum, Fée, 8e Mém. Foug. p. 68, et 9e Mém. p. 2, non Liebm. ex. Fourn. Mex. Pl. Enum. p. 66 (species propria).
Acrostichum schmitzii, Mett. ex Kuhn in Linnæa, xxxvi. p. 51.
Acrostichum schiedei, Kunze, Anal. Pterid. p. 10; Mart. et Gal. Foug. Mex. p. 23; Liebm. Mexicos Bregner, p. 15.
Acrostichum elongatum, Kunze; Fourn. loc. cit. (species propria).
Acrostichum intermedium, Fée, 7e Mém. Foug. p. 69, et 9e Mém. p. 2, non Brack., ex Fourn.
Elaphoglossum cognatum, Thos. Moore, Ind. Fil.

South Mexico, San Nicolas (*Schmitz: schmitzii*), Chinantla, Puebla 7000 to 8000 feet (*Liebmann: schiedei*), Rio Blanco, region of Orizaba (*Bourgeau*, 2538, 3065: *elongatum*); Guatemala (*Skinner; Godman & Salvin*).—West Indies to Peru and South Brazil. Hb. Kew.

40. **Acrostichum villosum,** Swartz; Hook. Sp. Fil. v. p. 225; Hook. et Bak. Syn. Fil. p. 409; Hook. et Grev. Ic. Fil. t. 95.

South Mexico, Barranca de Huitamalca (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 308).—Cuba to Peru. Hb. Kew.

41. **Acrostichum viscosum,** Swartz; Hook. Sp. Fil. v. p. 220; Hook. et Grev. Ic. Fil. t. 61; Hook. et Bak. Syn. Fil. p. 406; Fourn. Mex. Pl. Enum. i. p. 69 ("species non visa").

South Mexico, Zimapan (*Coulter*, 1695, 1696), Chiapas &c. (*Ghiesbreght*, 314), region of Orizaba (*Bourgeau*, 3065); Guatemala, Volcan de Fuego at 6000 feet (*Godman & Salvin*, 242).—West Indies to Peru and Brazil, and in Tropical Asia and Africa. Hb. Kew.

42. **Acrostichum viride,** Fourn. Mex. Pl. Enum. i. p. 66.

South Mexico, Hacienda de las Animas (*Hahn*, 455).

Suborder III. *OSMUNDACEÆ.*

Restricted to the genera *Osmunda* and *Todea*; the latter is confined to the southern hemisphere, and comprises about half a dozen species, inhabiting Australia, New Zealand, Polynesia, and South Africa.

41. OSMUNDA.

Osmunda, Linn.; Hook. et Bak. Syn. Fil. p. 426, t. 8. fig. 62.

There are six species of this genus, as they are defined in the 'Synopsis Filicum,' and they are very widely spread in both north and south temperate regions, rarer in the tropics.

1. **Osmunda cinnamomea,** Linn.; Hook. et Bak. Syn. Fil. p. 426; Fourn. Mex. Pl. Enum. i. p. 140; Eaton, Ferns N. Am. i. p. 227, t. 29. figg. 3–5; Liebm. Mexicos Bregner, p. 152.

Osmunda imbricata, Kunze, Farrnkr. ii. p. 29, t. 112.

Newfoundland and Canada to Wisconsin and southward to Florida and Louisiana.—South Mexico, San Antonio, Huatusco at 4500 feet (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 300).—Colombia to Peru and South Brazil, and in Eastern Asia. Hb. Kew.

2. **Osmunda regalis,** Linn.; Hook. et Bak. Syn. Fil. p. 427; Fourn. Mex. Pl. Enum. i. p. 140; Eaton, Ferns N. Am. i. p. 209, t. 28.

Osmunda spectabilis, Willd. Sp. Pl. v. p. 98; Mart. et Gal. Foug. Mex. p. 21.

Osmunda spectabilis, Willd., *β. palustris*, Presl; Liebm. Mexicos Bregner, p. 152.
Osmunda regalis, Linn., var. *spectabilis*, Willd., *β. brasiliensis*, Kunze in Linnæa, xviii. p. 308.
Osmunda mexicana, Fée, 9e Mém. Foug. p. 43.
Osmunda palustris, Schrader; Link, Fil. Hort. Berol. p. 20.

Canada southward on the eastern side.—North Mexico, Sierra Madre (*Seemann*, 1950); South Mexico, Huatusco (*Liebmann*), Jalapa 4000 feet (*Galeotti*, 6388; *Linden*, 2), Chiapas &c. (*Ghiesbreght*, 299), region of Orizaba (*Bourgeau*, 2791); Guatemala, Coban (*Godman & Salvin*), Alta Vera Paz (*Türckheim*).—Eastern South America to Brazil, and very widely spread in the Old World.—Hb. Kew.

Suborder IV. *SCHIZÆACEÆ.*

Of this Suborder there are five genera; those not represented within our limits being, *Mohria*, an African monotype, and *Trochopteris*, also a monotype, and only represented in the Kew Herbarium from South Brazil; but it has been erroneously recorded as having been found in Cuba by Fée (Fil. Antil. p. 125).

42. SCHIZÆA.

Schizæa, Smith; Hook. et Bak. Syn. Fil. p. 428, t. 8. fig. 64.

A genus of about sixteen species, very widely spread in temperate and subtropical regions, though not represented in Europe. There is one endemic North-American species, which inhabits Nova Scotia and New Jersey, and there is one that has hitherto only been found in the Auckland and Falkland Islands. Another, *S. dichotoma*, has a wide range both in the Old World and America, reaching Venezuela and Cuba, and probably also occurring in Central America.

1. **Schizæa (Lophidium) elegans,** Swartz; Hook. et Bak. Syn. Fil. p. 430; Fourn. Mex. Pl. Enum. i. p. 139; Hook. Gard. Ferns, t. 54; Liebm. Mexicos Bregner, p. 149.
Lophidium elegans, Presl, Suppl. p. 77.
Acrostichum elegans, Vahl, Symb. ii. p. 104, t. 50.

South Mexico, Cordillera of Oaxaca, 4000 feet (*Galeotti*, 6536), Jocotepec (*Liebmann*).—West Indies to Peru, Guiana, and Brazil. Hb. Kew.

43. ANEMIA.

Anemia, Swartz (*Aneimia*, auct. plur.); Hook. et Bak. Syn. Fil. p. 431, et ed. 2, p. 525, t. 8. fig. 65.

Of the twenty-seven species of this genus, twenty-six are American, ranging from the South-eastern States of North America to Peru and South Brazil. The remaining one is endemic in South Africa.

1. **Anemia adiantifolia,** Swartz; Hook. et Bak. Syn. Fil. p. 434; Ch. et Schl. in Linnæa, v. p. 621; Fourn. in Bull. Soc. Bot. France, xix. p. 261, et Mex. Pl. Enum.

i. p. 139; Eaton, Ferns N. Am. i. p. 103, t. 14. fig. 2, et in Proc. Am. Acad. xviii. p. 189.

Anemia opaca, Fée, 9e Mém. Foug. p. 41.

Florida.—North Mexico?, on the route from San Luis Potosi to Tampico (*Palmer*, 1160); South Mexico, region of Orizaba (*Bourgeau*, 2789; *Linden*, 35), Puente Nacional, Vera Cruz (*Galeotti*, 6324), Tabasco (*Linden*, 1488), Chiapas &c. (*Ghiesbreght*, 240); Guatemala, Sacluc (*Bernoulli & Cardio*, 392), Yzabal (*Godman & Salvin*); Nicaragua (*Lévy*, 27).—Cuba and Bahamas to Bahia. Hb. Kew.

2. **Anemia affinis,** Bak. in Hook. et Bak. Syn. Fil. ed. 2, p. 525.

Anemia collina, J. Sm. in Seem. Bot. Voy. 'Herald,' p. 343; Fourn. Mex. Pl. Enum. i. p. 139, non Raddi.

North Mexico, Sierra Madre (*Seemann*, 1951). Hb. Kew.

Galeotti's number 6364, referred by Martens and Galeotti (Foug. Mex. p. 20) and by Fournier to *A. collina*, Raddi, is not in the Kew Herbarium.

3. **Anemia breuteliana,** Presl; Hook. et Bak. Syn. Fil. p. 432.

Anemia mandioccana, Hook. Gen. Fil. t. 90, non Raddi.

Anemia incisa, Schrad.; Mart. Ic. Crypt. Bras. p. 115, tt. 55 et 56; Fourn. Mex. Pl. Enum. i. p. 139.

Anemia hirsuta, var. *a. integrifolia*, Fourn., syn. *A. filiformis*, Swartz, ex Fourn. loc. cit., et in Bull. Soc. Bot. France, xix. p. 261 (species propria).

South Mexico, region of Orizaba (*Bourgeau*, 2778 : *filiformis*, ex Fourn.), Rio Blanco (*Bourgeau*, 3617 : *incisa*, ex Fourn.); Nicaragua, Granada and Omotépé (*Lévy*, 209, 264).—West Indies to Peru and Brazil. Hb. Kew.

A. filiformis, Swartz, as circumscribed in the 'Synopsis Filicum,' is not represented in the Kew Herbarium by Mexican specimens, although recorded as Mexican.

[*A. helveola*, Fée (9e Mém. Foug. p. 41), to which Fournier refers Galeotti's numbers 6541 and 6585 bis, which are not in the Kew Herbarium, is unknown to us.]

4. **Anemia hirsuta,** Swartz; Hook. et Bak. Syn. Fil. p. 433; Fourn. Mex. Pl. Enum. i. p. 139, pro parte.

Anemia ciliata, Presl, et *A. dissecta*, Presl, et *A. repens*, Raddi, ex Hook. et Bak.

South Mexico, region of Orizaba (*Bourgeau*, 2778), Potrero and Consoquitla (*Liebmann*), Cordillera of Oaxaca (*Galeotti*, 6363, 6543, 6567), Zacuapan (*Leibold*); Guatemala (*Skinner*), Motagua valley (*Godman & Salvin*), Barranca del Incensio (*Bernoulli*, 106); Costa Rica (*Harrison*); Panama, Veraguas (*Seemann*, 12).—Cuba to Peru and South Brazil. Hb. Kew.

5. **Anemia mexicana,** Klotzsch in Linnæa, xviii. p. 526; Hook. et Bak. Syn. Fil. p. 433; Fourn. Mex. Pl. Enum. i. p. 139; Hook. Ic. Pl. t. 988; Kunze, Farrnkr. ii. t. 131; Eaton, Ferns N. Am. i. p. 99, t. 14. fig. 1, et in Proc. Am. Acad. xviii. p. 189.

Anemia speciosa, Presl; Hook. 2nd Cent. Ferns, t. 65, teste Hook. et Bak.

Texas.—North Mexico?, on the route from San Luis Potosi to Tampico (*Palmer*,

1159); South Mexico, between Comaltepec and Tepitonga, 3800 to 4000 feet (*Liebmann*); Guatemala, Yzabal (*Godman & Salvin*). Hb. Kew.

6. **Anemia oblongifolia,** Swartz; Hook. et Bak. Syn. Fil. p. 431; Fourn. Mex. Pl. Enum. i. p. 139; Bak. in Journ. Bot. 1884, p. 364.

Anemia pilosa, Mart. et Gal. Foug. Mex. p. 19, t. 2. fig. 1.
Anemia humilis, Swartz, et *A. pumila,* Klotzsch, ex Bak. et Hook.
Anemia seemannii, Hook. Lond. Journ. Bot. vii. p. 564, t. 16.

South Mexico, Trapiche de la Concepcion (*Liebmann*), Cordillera of Oaxaca 3000 to 6000 feet (*Galeotti*, 6353), Tepitonga, Oaxaca (*Liebmann*); Guatemala, San Gerónimo (*Godman & Salvin*), between Rosario and Vega (*Bernoulli & Cario*, 300); Costa Rica (*Harrison*); Panama, island of Taboga (*Seemann*, 992).—Southward to Peru and Brazil. Hb. Kew.

7. **Anemia (Anemidictyon) phyllitidis,** Swartz; Hook. et Bak. Syn. Fil. p. 435; Raddi, Fl. Bras. t. 8; Fourn. Mex. Pl. Enum. i. p. 140; Liebm. Mexicos Bregner, p. 152; Kuhn, Beitr. Mex. Farrnk. p. 25; Bak. in Journ. Bot. 1884, p. 364.

Anemia hænkei, Presl; Mart. et Gal. Foug. Mex. p. 19.
Anemidictyon phyllitidis, Presl, Suppl.
Anemia cordifolia, Presl, loc. cit. p. 73, t. 11. fig. 3.
Anemia fraxinifolia, Raddi, Fil. Bras. p. 69, t. 8 bis.

South Mexico, valley of Cordova (*Bourgeau*, 1448), Mirador 3000 feet (*Liebmann*; *Linden*, 3), Zacuapan (*Leibold*), Jalapa 4000 feet (*Galeotti*, 6399; *Harris*); Guatemala (*Skinner*), Motagua valley and Carrizal (*Godman & Salvin*); Costa Rica (*Harrison*); Panama, Boquete, Veraguas (*Seemann*, 1121).—West Indies to Peru and South Brazil. Hb. Kew.

8. **Anemia tomentosa,** Swartz; Hook. et Bak. Syn. Fil. p. 433; Hook. Fil. Exot. t. 26 (*fulva*) et t. 31 (*flexuosa*); Eaton in Proc. Am. Acad. xviii. p. 189.

Anemia flexuosa, Swartz, *A. deltoidea,* Swartz, *A. fulva,* Swartz, et *A. villosa,* H. B. K., teste Hook. et Bak.; Fourn. Mex. Pl. Enum. i. p. 139.

North Mexico, Escobrillos mountains (*Schaffner*, 945: *fulva*); South Mexico, Zacuapan (*Leibold*); Guatemala (*Skinner; Godman & Salvin*), Baño de los Padres (*Bernoulli*, 123).—West Indies to Peru and Monte Video. Hb. Kew.

44. LYGODIUM.

Lygodium, Swartz; Hook. et Bak. Syn. Fil. p. 436, et ed. 2, p. 325, t. 9. fig. 68.

A genus of eighteen species, very widely diffused in warm countries, and extending to Temperate North America, Asia, South Africa, and New Zealand.

1. **Lygodium digitatum,** Eaton, Fil. Wright. et Fend. p. 217, non Presl, ex Hook. et Bak. Syn. Fil. p. 437.

Guatemala, Yzabal (*Godman & Salvin*); Panama, Lion Hill (*S. Hayes*).—Colombia. Hb. Kew.

2. **Lygodium heterodoxum,** Kunze, Farrnkr. ii. p. 32, t. 113; Hook. et Bak. Syn. Fil. p. 439; Fourn. in Bull. Soc. Bot. France, xix. p. 261.

Hydroglossum spectabile, Liebm. Mexicos Bregner, p. 147; Fourn. Mex. Pl. Enum. i. p. 138.

Hydroglossum mexicanum, Fée, 9e Mém. p. 42.

Lygodium scandens, Mart. et Gal. Foug. Mex. p. 18, non Schkuhr.

South Mexico, Teapa, Tabasco (*Linden*, 1506), San Pedro, Tepinapa (*Liebmann*), Sierra San Pedro Nolasco (*Jurgensen*, 763); Guatemala, Alta Vera Paz (*Türckheim*, 361); Nicaragua (*Tate*, 77), Chontales (*Lévy*, 1463). Hb. Kew.

3. **Lygodium mexicanum,** Presl, Reliq. Hænk. i. p. 72; Kunze in Linnæa, xviii. p. 308; Fourn. Mex. Pl. Enum. i. p. 138; Eaton in Proc. Am. Acad. xviii. p. 189; Hook. et Bak. Syn. Fil. p. 438, sub *L. scandente.*

Lygodium venustum, Liebm. Mexicos Bregner, p. 146, non Swartz.

South Mexico, Colipa, Antigua, and Trapiche de la Concepcion (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 265). Hb. Kew.

This is very near the widely-dispersed Old-World *L. scandens*, Swartz, with which it is associated in the 'Synopsis Filicum.'

4. **Lygodium venustum,** Swartz; Hook. et Bak. Syn. Fil. p. 438; Mart. et Gal. Foug. Mex. p. 13.

Lygodium polymorphum, H. B. K. Nov. Gen. et Sp. i. p. 31; Fourn. in Bull. Soc. Bot. France, xix. p. 261, et Mex. Pl. Enum. i. p. 138.

Lygodium pubescens, Mart. et Gal. loc. cit. p. 17, ex Fourn.

Lygodium schiedeanum, Presl, Suppl. p. 110, ex Fourn.

Lygodium mexicanum, Liebm. Mexicos Bregner, p. 146, non Presl.

South Mexico, Chiapas &c. (*Ghiesbreght*, 258); Guatemala (*Godman & Salvin*); Honduras, Belize (*Barlee*); Salvador (*Bernoulli*, 14); Nicaragua, island of Omotépé, lake of Nicaragua (*Lévy*, 130); Panama, Chagres (*Fendler*, 385), Rio Santa Maria (*Seemann*, 17).—West Indies to Peru and Brazil. Hb. Kew.

5. **Lygodium volubile,** Swartz; Hook. et Bak. Syn. Fil. p. 438.

Lygodium hastatum, Mart. teste Hook. et Bak. sed vix Liebm. Mexicos Bregner, p. 147.

Panama, Chagres (*Fendler*, 384).—Cuba to Brazil. Hb. Kew.

In addition to the foregoing names, Fournier (Bull. Soc. Bot. France, xix. p. 261) records *L. commutatum*, Presl, and *L. oligostachyum*, Desv., from Nicaragua (*Lévy*, 130 bis and 1363).

Suborder V. *MARATTIACEÆ.*

Four genera are referred to this Suborder; those not found within our limits being the curious Asiatic monotypic *Kaulfussia* and the genus *Angiopteris*, which ranges from India to Madagascar, Australia, New Caledonia, and the Society Islands. Hooker and Baker regard all the forms of *Angiopteris* as varieties of one species, while De Vriese describes sixty of them as species.

45. MARATTIA.

Marattia, Smith; Hook. et Bak. Syn. Fil. p. 440, et ed. 2, p. 525, t. 9. fig. 70.

There are eight species of this genus widely spread in the tropics, and extending into south temperate regions.

1. **Marattia alata,** Smith; Hook. et Bak. Syn. Fil. p. 442; J. Sm. in Seem. Bot. Voy. 'Herald,' p. 343.

Marattia microphylla, Fée, et *M. lævis,* Fée, 9e Mém. Foug. p. 43; Fourn. Mex. Pl. Enum. i. p. 136.
Discostegia, Presl, Suppl. p. 11.
Marattia weinmanniæfolia, Liebm. Mexicos Bregner, p. 156; Fourn. in Bull. Soc. Bot. France, xix. p. 261.

South Mexico, Oaxaca 7000 to 8000 feet (*Liebmann*); Cordillera of Oaxaca at 5000 feet (*Galeotti*, 6349), Chiapas &c. (*Ghiesbreght*, 241); Guatemala, Chilasco (*Godman & Salvin*); Nicaragua (*Lévy*, 1473).—West Indies. Hb. Kew.

2. **Marattia laxa,** Kunze in Linnæa, xviii. p. 306, et Farrnkr. i. p. 231, t. 95; Hook. et Bak. Syn. Fil. p. 441; Fourn. Mex. Pl. Enum. i. p. 137.

Gymnotheca laxa, Presl, Suppl. Tent. Pterid. p. 15.

South Mexico, Hacienda de Jovo (*Liebmann*), valley of Cordova (*Bourgeau*, 2108), near Mexico (*Leibold*). Hb. Kew.

46. DANÆA.

Danæa, Smith; Hook. et Bak. Syn. Fil. p. 442, et ed. 2, p. 525, t. 9. fig. 71.

An exclusively Tropical-American genus of about a dozen species.

1. **Danæa alata,** Smith; Hook. et Bak. Syn. Fil. p. 443; Hook. et Grev. Ic. Fil. t. 18.

Panama, Chagres (*Fendler*, 389).—West Indies. Hb. Kew.

2. **Danæa crispa,** Endres et Reichb. f. in Bot. Zeit. 1872, p. 489; Hook. et Bak. Syn. Fil. ed. 2. p. 525.

Costa Rica, San José (*Endres*). Hb. Kew.

3. **Danæa cuspidata,** Liebm. Mexicos Bregner, p. 155; Fourn. Mex. Pl. Enum. i. p. 136.

South Mexico, Lobani, Petlapa 2500 feet (*Liebmann*).

This is not in the Kew Herbarium; but Moore, according to the 'Synopsis Filicum,' took it to be probably the same as *D. stenophylla*, Kunze, a West-Indian species. *D. alata*, Liebm., loc. cit. p. 306, from the Hacienda de Jovo, is another doubtful plant.

4. **Danæa elliptica,** Smith; Hook. et Bak. Syn. Fil. p. 444; Fourn. Mex. Pl. Enum. i. p. 136; Hook. et Grev. Ic. Fil. t. 52.

Danæa media, Liebm. Mexicos Bregner, p. 154, teste Fourn.

Danæa geniculata, Raddi, Fil. Bras. t. 5.

South Mexico, Hacienda de Jovo (*Liebmann*); Panama, Chagres (*Fendler*, 390).—West Indies to South Brazil, common. Hb. Kew.

5. **Danæa moritziana,** Presl, Suppl. Tent. Pterid. vi. p. 35; Hcok. et Bak. Syn. Fil. p. 443.

Nicaragua, Chontales (*Seemann*, 218).—Jamaica and Colombia to Peru. Hb. Kew.

6. **Danæa nodosa,** Smith; Hook. et Bak. Syn. Fil. p. 444; Hook. et Grev. Ic. Fil. t. 51.

Panama (*Cuming*).—Cuba to Brazil. Hb. Kew.

7. **Danæa wendlandii,** Reich. f. in Bot. Zeit. 1872, p. 490; Hook. et Bak. Syn. Fil. ed. 2, p. 526.

Costa Rica (*Wendland*).

Suborder VI. *OPHIOGLOSSACEÆ.*

Besides the two genera represented in Mexico, there is one other, namely *Helminthostachys*, an Asiatic and Australian monotype. Presl's *Botryopteris mexicana* is a synonym of it, and was by mistake published as Mexican. Fournier queries the latter as a synonym of *Anemia phyllitidis.*

47. OPHIOGLOSSUM.

Ophioglossum, Linn.; Hook. et Bak. Syn. Fil. p. 444.

Almost universally spread, except in the arctic regions. Hooker and Baker reduce the numerous species described by various authors to ten.

1. **Ophioglossum palmatum,** Linn.; Hook. et Bak. Syn. Fil. p. 446; Eaton, Ferns N. Am. ii. p. 269, t. 81. figg. 11–14; Fourn. Mex. Pl. Enum. i. p. 141; Mart. et Gal. Foug. Mex. p. 14.

Cheiroglossa palmata, Presl, Suppl. p. 57; Fée, 11e Mém. Foug. p. 127.

Florida.—South Mexico, Chinantla at 3000 feet (*Galeotti*, 6603).—West Indies to South Brazil and Peru; also in the Seychelles and Bourbon. Hb. Kew.

Galeotti seems to have been the only collector who has met with this striking species in Mexico, and we have no record of it in Central America.

2. **Ophioglossum reticulatum,** Linn.; Hook. et Bak. Syn. Fil. p. 446; Hook. et Grev. Ic. Fil. t. 20; Fourn. Mex. Pl. Enum. i. p. 141; Mart. et Gal. Foug. Mex. p. 13; Liebm. Mexicos Bregner, p. 153.

South Mexico, Cordillera of Oaxaca 7000 feet (*Galeotti*, 6601), region of Orizaba

(*Bourgeau*, 3073).—West Indies to Peru and South Brazil; also widely dispersed in Africa, the warmer parts of Asia, and in Polynesia. Hb. Kew.

O. vulgatum has an exceedingly wide range, including Texas and Arizona, but we have seen no Mexican specimens, and no record of any. Klotzsch, however (Linnæa, xviii. p. 529) records *O. bulbosum*, Mich.=*O. crotalophoroides*, Walker (Eaton, Ferns N. Am. ii. p. 265, t. 81. figg. 5–7) from Real del Monte, Ehrenberg.

48. BOTRYCHIUM.

Botrychium, Swartz; Hook. et Bak. Syn. Fil. p. 447, t. 9. fig. 75.

Six species are admitted in the 'Synopsis Filicum,' and they are generally spread in temperate and arctic regions; rare in the tropics, and, what is very remarkable, the genus is apparently nowhere represented in Africa.

1. **Botrychium ternatum,** Swartz; Hook. et Bak. Syn. Fil. p. 448; Eaton, Ferns N. Am. i. p. 147, t. 20 et 20 *a*, et in Proc. Am. Acad. xviii. p. 189.

Botrychium obliquum, Muhlenb.; Ch. et Schl. in Linnæa, v. p. 621; Liebm. Mexicos Bregner, p. 153; Fourn. Mex. Pl. Enum. i. p. 141.

Botrychium decompositum, Mart. et Gal. Foug. Mex. p. 15, t. 1.

Newfoundland to Unalaska and southward to California and Florida.—North Mexico, in the San Miguelito mountains (*Schaffner*, 944); South Mexico, between Totutla and Mirador (*Liebmann*), region of Orizaba (*Bourgeau*, 3154), Chiapas &c. (*Ghiesbreght*).—Colombia and Venezuela; and widely dispersed in the Old World, ranging from Central Europe and Northern Asia to Australia and New Zealand. Hb. Kew.

2. **Botrychium virginianum,** Swartz; Hook. et Bak. Syn. Fil. p. 448; Fourn. Mex. Pl. Enum. i. p. 140; Eaton, Ferns N. Am. i. p. 253, t. 33, et in Proc. Am. Acad. xviii. p. 189; Hook. et Grev. in Hook. Bot. Misc. iii. 1833, p. 223 (var. *mexicanum*); Liebm. Mexicos Bregner, p. 153.

Botrychium brachystachys, Kunze in Linnæa, xviii. p. 305.

New Brunswick, Canada, and Oregon southward to Florida.—North Mexico, San Miguelito mountains (*Schaffner*, 943); South Mexico, San Nicolas (*Schmitz*), Real del Monte (*Coulter*, 1716), Desierto Viejo (*Bourgeau*, 915), Chiapas &c. (*Ghiesbreght*, 430); Guatemala, Chilasco and Volcan de Agua (*Godman & Salvin*).—Colombia to Ecuador and Brazil; and Eastern Europe to Japan, as well as in the Neilgherries and Ceylon. Hb. Kew.

Order CLXII. EQUISETACEÆ.

Equisetaceæ, Milde in Nov. Act. Acad. Nat. Cur. xxiv. pars 2, cum tab. 35, et Fil. Europ. &c. pp. 20–9250.

Restricted to the genus *Equisetum*, which comprises about twenty-five species, generally dispersed in the northern hemisphere, from the arctic regions southward; much

rarer in the southern hemisphere, and unknown in Australia, New Zealand, and the greater part of Polynesia, as well as Patagonia and Fuegia. The genus is also unrepresented in most oceanic islands, as Ascension, St. Helena, Tristan da Cunha, and all the islands in the south part of the Indian Ocean. One species has been collected in the Bermudas, where, however, it seems to be very rare; and *E. debile* ranges from Japan to the New Hebrides, New Caledonia, and the Fijis. Several of the species have a wide range, and *E. ramosissimum* almost covers the area of the genus. The greatest concentration of species is in America, where twenty-one out of the twenty-five occur, and of these nine are endemic. Thirteen species inhabit America north of Mexico, but only one, *E. lævigatum*, is peculiar to that region.

1. **Equisetum bogotense,** H. B. K. Nov. Gen. et Sp. i. p. 42; Milde in Nov. Act. Nat. Cur. xxiv. 2, p. 311, t. 12, et Fil. Europ. &c. p. 226.

Equisetum ramosissimum, Seem. Bot. Voy. 'Herald,' p. 244, non H. B. K.

Costa Rica, Cartago (*Friedrichsthal*); Panama, Chiriqui, Veraguas (*Seemann*, 1547).—Colombia to Guiana and Chili. Hb. Kew.

Hartweg's specimen of this species recorded from Jamaica, was collected near Quito, as is proved by the original label bearing the same number, namely 1462.

2. **Equisetum giganteum,** Linn. Sp. Pl. ed. 2, p. 1517; Milde in Nov. Act. Nat. Cur. xxiv. 2, p. 397, t. 21, et Fil. Europ. &c. p. 232.

Equisetum ramosissimum, H. B. K. in Willd. Sp. Pl. v. p. 9, teste Milde.

Guatemala, Patal, Baja Vera Paz (*Bernoulli & Cario*, 140).—West Indies to Chili and Brazil. Hb. Kew.

Ernst collected specimens of this species in the neighbourhood of Caracas from plants 36 feet high, though the stems were barely $\frac{3}{4}$ inch thick, being partially supported by other vegetation.

3. **Equisetum mexicanum,** Milde in Nov. Act. Acad. Nat. Cur. xxiv. 2, p. 504, t. 28, non Verhandl. zool.-bot. Gesell. Wien, 1862, p. 1256.

South Mexico, on the Rio Blanco, Orizaba (*Müller*, 1855), Hacienda de Mirador (*Liebmann*).

4. **Equisetum myriochætum,** Ch. et Schl. in Linnæa, v. p. 623; Milde in Nov. Act. Nat. Cur. xxiv. 2, p. 493, t. 27, et Fil. Europ. &c. p. 240; Fourn. Mex. Pl. Enum. i. p. 142.

South Mexico, Misantla (*Schiede*), Cordova (*Schaffner*), Mirador (*Linden; Bourgeau*, 2767). Hb. Kew.

5. **Equisetum ramosissimum,** Desf. Fl. Atl. ii. p. 398; Milde in Nov. Act. Nat. Cur. xxiv. 2, p. 428, t. 24, et Fil. Europ. &c. p. 234.

Equisetum elongatum, Willd. Sp. Pl. v. p. 8, teste Milde; Fourn. Mex. Pl. Enum. i. p. 142.

British Colombia southward.—South Mexico, Eugenio, Sierra de la Cruz (*Müller*), Jicaltepec, Chinantla (*Liebmann*), Orizaba (*Schaffner; Müller*), near Jalapa (*Galeotti*,

6225).—Southward to CHILI, and widely spread in EUROPE, ASIA, and AFRICA, including the AZORES and CANARIES.

This widely diffused species presents a great variety of forms, in all parts of its area, only two of which, however, are peculiar to our region. These are *mülleri* and *annuliferum* (Milde, loc. cit. pp. 438 et 444), from Chinantla and the Sierra de la Cruz respectively.

6. **Equisetum robustum,** A. Brown in Sillim. Am. Journ. Sc. xlvi. 1844, p. 88; Milde in Nov. Act. Nat. Cur. xxiv. 2, p. 533, t. 31, et Fil. Europ. p. 241; Fourn. Mex. Pl. Enum. i. p. 142; Eaton in Proc. Am. Acad. xviii. p. 189.

CANADA and BRITISH COLUMBIA southward to CALIFORNIA and TEXAS.—NORTH MEXICO, swamps near Morales (*Schaffner*, 964); SOUTH MEXICO, Orizaba (*Weber*), scattered in the valley of Mexico (*Schaffner*).—Also in INDIA.

7. **Equisetum schaffneri,** Milde in Verhandl. zool.-bot. Gesell. Wien, 1861, p. 345; Nov. Act. Nat. Cur. xxiv. 2, p. 421, t. 23, et Fil. Europ. &c. p. 233; Fourn. Mex. Pl. Enum. i. p. 142.—NORTH MEXICO, San Luis Potosi (*Virlet d'Aoust*); SOUTH MEXICO, Orizaba (*Schaffner*).—PERU; CHILI.

Order CLXIII. LYCOPODIACEÆ.

As here limited, this Order includes only two other genera besides those represented in Mexico, namely, *Phylloglossum*, a very remarkable monotype, resembling a miniature *Plantago*, and inhabiting Australia and New Zealand; and *Tmesipteris*, also a very singular monotype, which is spread over Australia, New Zealand, and Polynesia, and has been recorded as having been collected in California by Douglas; but it is just possible that the specimens in the Kew Herbarium purporting to come from California were so labelled by mistake, for there is no other evidence of its existence in that country. The Order is almost ubiquitous, except in the very driest regions; yet it seems to be wholly wanting in the island of Juan Fernandez, where there is a rich fern-vegetation; and none has hitherto been collected in the Bermudas, where there are about twenty-five species of ferns, except the littoral *Psilotum triquetrum*. On the other hand two species of *Lycopodium* occur in the very sparse flora of Ascension.

1. LYCOPODIUM.

Lycopodium, Linn. pro parte; Spring, Monogr. Fam. Lycop. i. et ii. pp. 5–52.

This genus is generally spread where there is sufficient humidity; and several of the species have an exceedingly wide range. It is noteworthy, however, that no species is known to occur in California, and the genus is only very sparingly represented eastward through Arizona, New Mexico, and Texas. Spring retains 107 species, which Mr. J. G. Baker, in a synopsis of the genus he has prepared for publication, reduces to eighty.

1. **Lycopodium cernuum,** Linn.; Spring, Monogr. Lycopod. i. p. 79, et ii. p. 37; Griseb. Fl. Brit. W. Ind. p. 647; Liebm. in Vidensk. Meddel. 1847, p. 40; Fourn. Mex. Pl. Enum. i. p. 145; Hemsl. Bot. Chall. Exped. ii. p. 92.

South Mexico, valley of Cordova (*Bourgeau*, 1937), Chiapas &c. (*Ghiesbreght*, 601); Guatemala, Coban, Alta Vera Paz (*Türckheim*, 220); Nicaragua, Chontales (*Tate*).—Tropics generally, and extending to the Azores. St. Helena, St. Paul, New Zealand, and the Cape of Good Hope. Hb. Kew.

2. **Lycopodium clavatum,** Linn.; Spring, Monogr. Lycopod. i. p. 88, et ii. p. 42; Griseb. Fl. Brit. W. Ind. p. 646; Chapm. Fl. Southern U.S. p. 600; Ch. et Schl. in Linnæa, v. p. 622; Liebm. in Vidensk. Meddel. 1847, p. 40; Fourn. Mex. Pl. Enum. i. p. 145; Hemsl. Bot. Chall. Exped. ii. p. 196.

Lycopodium cristatum, Willd.; Mart. et Gal. Foug. Mex. p. 9.

Lycopodium piliferum, Raddi, Fil. Bras. p. 79, t. 3.

Lycopodium trichophyllum, Desv. in Mém. Soc. Linn. Par. vi. p. 184; Fourn. Mex. Pl. Enum. i. p. 145.

Lycopodium trichiatum, Spring, Monogr. Lycop. i. p. 91; Liebm. loc. cit. p. 41.

Lycopodium contiguum, Klotzsch in Linnæa, xviii. p. 519; Fourn. loc. cit. p. 146 (species propria).

Arctic regions southward.—South Mexico, around Mexico (*Schmitz*), region of Orizaba (*Bourgeau*, 2768), Cordillera of Oaxaca 7000 feet (*Galeotti*, 6602), summit of Sempoaltepec 11,000 to 12,000 feet (*Liebmann*). Cosmopolitan. Hb. Kew.

3. **Lycopodium complanatum,** Linn.; Spring, Monogr. Lycopod. i. p. 101, et ii. p. 47; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 674; Griseb. Fl. Brit. W. Ind. p. 646; Fourn. Mex. Pl. Enum. i. p. 146.

Lycopodium thyoides, Willd. Sp. Pl. v. p. 18; Mart. et Gal. Foug. Mex. p. 9; Ch. et. Schl. in Linnæa, v. p. 622.

Canada southward.—South Mexico, region of Orizaba (*Bourgeau*, 3159, 3190). Pine forests Tiuzutlan and Tepitonga (*Liebmann*), Chiapas &c. (*Ghiesbreght*), Zacualtipan (*Hartweg*, 409), Cordillera of Oaxaca (*Galeotti*, 6604); Guatemala, Huehuetenango (*Bernoulli & Cario*, 193).—Southward to Peru and Brazil, and widely spread in Europe and Asia southward to Java. Hb. Kew.

4. **Lycopodium dichotomum,** Jacq.; Spring, Monogr. Lycopod. i. p. 41, et ii. p. 18; Griseb. Fl. Brit. W. Ind. p. 647; Fourn. Mex. Pl. Enum. i. p. 144.

Lycopodium mandioccanum, Spring, loc. cit. i. p. 44, *a. brasiliense* et *β. mexicanum*; Fourn. loc. cit. p. 145 (species propria); Liebm. in Vidensk. Meddel. 1847, p. 39.

Lycopodium pithyoides, Ch. et Schl. in Linnæa, v. p. 623.

South Mexico, Jalapa (*Linden*, 81); Guatemala, Chilasco and Coban (*Salvin & Godman*, 348), Volcan de Fuego (*Salvin*); Panama, Santiago Veraguas (*Seemann*, 33).—Southward to Peru and Brazil, and in the West Indies; also in the Galapagos. Hb. Kew.

5. **Lycopodium linifolium,** Linn.; Spring, Monogr. Lycopod. i. p. 30, et ii. p. 12; Griseb. Fl. Brit. W. Ind. p. 647; Mart. et Gal. Foug. Mex. p. 7; Ch. et Schl. in Linnæa, v. p. 622; Fourn. Mex. Pl. Enum. i. p. 144.

South Mexico, Hacienda de Jovo (*Liebmann*), Jalapa (*Galeotti*, 6609); Guatemala, (*Skinner*), Coban and Choctum (*Godman & Salvin*, 385).—Colombia to Peru, Guiana and Brazil. Hb. Kew.

6. **Lycopodium mollicomum,** Mart. ex Spring in Flora, 1838, i. p. 162, et in Fl. Bras. i. p. 113; Monogr. Lycopod. i. p. 42, sub *L. setaceo.*

Lycopodium gramineum, Spring, Monogr. ii. p. 12.

Guatemala, Yzabal (*Godman & Salvin*); Panama, Lion Hill (*S. Hayes*, 378).—Colombia to Brazil. Hb. Kew.

7. **Lycopodium reflexum,** Lam.; Spring, Monogr. Lycopod. i. p. 25, et ii. p. 10; Fourn. Mex. Pl. Enum. i. p. 144; Griseb. Fl. Brit. W. Ind. p. 647.

South Mexico, Jalapa (*Harris; Linden*, 82), San Antonio, Huatusco (*Liebmann*), around Mexico (*Schmitz*), near Orizaba (*Schaffner*).—Colombia, Peru, Brazil, and the West Indies. Hb. Kew.

8. **Lycopodium serratum,** Thunb.; Spring, Monogr. Lycopod. i. p. 39, et ii. p. 18; Fourn. Mex. Pl. Enum. i. p. 144.

Lycopodium sargassifolium, Liebm. in Vidensk. Meddel. 1847.

South Mexico, Villa Alta, Oaxaca (*Liebmann*).—Tropical and Subtropical Asia, common, and Polynesia, from Samoa to the Sandwich Islands. Hb. Kew.

9. **Lycopodium subulatum,** Desv.; Spring, Monogr. Lycopod. i. p. 71, et ii. p. 32.

Guatemala, Chilasco (*Godman & Salvin*).—Colombia to Peru, Guiana and Brazil. Hb. Kew.

10. **Lycopodium taxifolium,** Spring, Monogr. Lycopod. i. p. 31, excl. syn. *L. insulare,* Carmich. et *L. axillare,* Roxb., et ii. p. 13; Fourn. Mex. Pl. Enum. i. p. 144; Griseb. Fl. Brit. W. Ind. p. 647.

Lycopodium passerinoides, H. B. K. Nov. Gen. et Sp. i. p. 41; Spring, Monogr. i. p. 53; Fourn. loc. cit. (species propria).

Lycopodium nitens, Ch. et Schl. in Linnæa, v. p. 623; Spring, Monogr. i. p. 54; Liebm. in Vidensk. Meddel. 1847, p. 40.

Lycopodium linifolium, Liebm. loc. cit. teste Fourn.

South Mexico, Hacienda de Jovo (*Liebmann: passerinoides*), valley of Cordova (*Bourgeau*, 2021: *passerinoides*), near Orizaba (*Schaffner*); Guatemala, Coban and Volcan de Fuego (*Godman & Salvin*); Panama, Veraguas (*Bridges*).—Colombia to Peru and Brazil, and in the West Indies; also in Tropical Asia. Hb. Kew.

11. **Lycopodium verticillatum,** Linn.; Spring, Monogr. Lycopod. i. p. 46, et ii. p. 21; Griseb. Fl. Brit. W. Ind. p. 647; Liebm. in Vidensk. Meddel. 1847, p. 39; Fourn. Mex. Pl. Enum. i. p. 145.

Lycopodium acerosum, Swartz, Fl. Ind. Occ. iii. p. 1575; Fourn. loc. cit. (species propria).
Lycopodium fontinaloides β. mexicanum, Spring, Monogr. i. p. 49.
Lycopodium tenue, Mart. et Gal. Foug. Mex. p. 8, non H. B. K.

South Mexico, region of Orizaba (*Schaffner*), Cordillera of Oaxaca 7000 feet (*Galeotti*, 6600), around Mexico (*Schmitz*), Jalapa 4000 feet (*Galeotti*, 6612); Guatemala, Chilasco (*Godman & Salvin*); Panama, Veraguas (*Bridges*).—West Indies to Peru and Brazil; also in Africa and Polynesia. Hb. Kew.

2. PSILOTUM.

Psilotum, Swartz; Spring, Monogr. Lycopod. ii. p. 268; K. Müller, in Bot. Zeit. 1856, p. 217.

The forms of this genus are very numerous, but they are reducible to the following two species, the course taken by Baker in his unpublished Synopsis of the Lycopodiaceæ. Spring retains two flat forms as specifically distinct from *P. complanatum*, while Müller unites the very different *Tmesipteris* with *Psilotum* under Willdenow's name *Bernhardia*, and raises the number of species to sixteen including two of *Tmesipteris*. The genus is very widely spread in tropical and subtropical regions, especially in maritime districts. Müller records both a triquetrous and a complanate form from California, yet the genus is not included in Watson's Botany of California.

1. **Psilotum complanatum,** Swartz; Spring, Monogr. Lycopod. ii. p. 271; Griseb. Fl. Brit. W. Ind. p. 648; K. Müll. in Bot. Zeit. 1856, p. 221; Fourn. Mex. Pl. Enum. i. p. 149; Hemsl. Bot. Chall. Exped. iii. p. 258.

Bernhardia complanata, Willd.; Ch. et Schl. in Linnæa, v. p. 261.
Bernhardia schiedeana, B. ramulosa, B. zollingeri et *B. californica,* K. Müll. in Bot. Zeit. 1856, pp. 222 et 223.

South Mexico, Mirador (*Linden*, 75; *Liebmann*), Pedregal (*Schmitz*), Hacienda de la Laguna (*Schiede*).—Widely spread in Tropical America, Asia, and Polynesia; also found in North Eastern Australia, the Seychelles, and Madagascar, but hitherto not recorded from Africa. Hb. Kew.

2. **Psilotum triquetrum,** Linn.; Spring, Monogr. Lycopod. i. p. 269; Griseb. Fl. Brit. W. Ind. p. 648; Chapm. Fl. Southern U. S. p. 601; Hemsl. Bot. Chall. Exped. ii. p. 38; Fourn. Mex. Pl. Enum. i. p. 149.

Bernhardia floridana, B. mariana, B. antillarum, B. indica, B. novæ-hollandiæ, B. deppeana et *B. oahuensis,* K. Müll. in Bot. Zeit. 1856, pp. 233–241.

Bermudas, Florida.—South Mexico, Orizaba (*Botteri*, 1296; *Galeotti*, 6605 in part).—Tropical and subtropical regions in Asia, Africa, America, Australia, and Polynesia, including many remote islands. Hb. Kew.

Order CLXIV. SELAGINELLACEÆ.

As now limited to heterosporous genera this Order includes only *Selaginella* and *Isoetes*. We have seen no specimen of any species of the latter genus from within our limits, and no record of the occurrence of any; yet it is very probable that the genus is represented, for out of forty-six species enumerated by Baker (Journ. Bot. 1880), eleven, mostly endemic, inhabit North America, and some of them the countries bordering Mexico, from Texas to California. Further, one species is peculiar to Cuba and four or five to South America.

1. SELAGINELLA.

Selaginella, Beauv.; Spring in Regensb. Bot. Zeit. 1838, i. p. 148, et Monogr. Lycopod. ii. p. 52; J. G. Baker in Journ. Bot. 1883, p. 1, et passim 1883, 1884 et 1885.

Mr. Baker's recently finished synopsis of the species of this genus in the 'Journal of Botany' contains 312 species, respecting the general distribution of which he says:—"The genus is concentrated in the tropical zone and has its head-quarters in Tropical America. Only two species extend their range into Europe, and the Cape; Temperate Australian and South Temperate American species are neither numerous nor remarkable. In the New World and the Old World the species are entirely different, with but one exception amongst the distichous-leaved tropical species, *S. flabellata*, and two of the multifarious-leaved species, *S. rupestris* and *S. spinulosa*, both of which are characteristically temperate types. It is very rarely that any of the tropical species is found in more than one of the three continents, but it will be seen that three out of the four subgenera and most of the subordinate groups are represented alike in America, Asia, and Africa."

In North America, north of Mexico, the species are few, but the genus is represented northward into the arctic regions by *S. spinosa*. The other species on the eastern side are *S. rupestris* and *S. apus*; on the western side are *S. douglasii* and *S. oregona*, the former reaching British territory and the latter peculiar to the region of its name; and *S. lepidophylla* and *S. californica* occur in Lower California, the latter being endemic. The genus does not reach New Zealand nor Juan Fernandez, where, as stated under the order Lycopodiaceæ, no *Lycopodium* is known to exist, which is a remarkable fact, considering the large number of ferns in this insular flora; and only two or three species extend as far south as Chili.

1. **Selaginella apus,** Spring, Monogr. Lycopod. ii. p. 75 ex parte; Baker in Journ. Bot. 1884, p. 112; Fourn. Mex. Pl. Enum. i. p. 147.

Canada to Texas.—South Mexico, Orizaba (*Schaffner* ex Fourn.).

We include this on Fournier's authority, who also records it from Peru and Brazil, thus taking the same view of the species as Spring. Whether the Mexican specimen belongs to the genuine *S. apus* we have no means of telling. Baker says of this species

that it is interesting geographically as a representative in the temperate zone of a characteristically tropical group.

2. **Selaginella binervis,** Liebm. in Vidensk. Meddel. 1847; Bak. in Journ. Bot. 1884, p. 112.

Selaginella moritziana, Fourn. Mex. Pl. Enum. i. p. 148, non Spring.
Selaginella sarmentosa, Liebm. non A. Braun, teste Fourn.

South Mexico, San Antonio, Huatusco (*Liebmann*). Hb. Kew.

[Fournier refers a Mexican specimen collected by Liebmann to *S. brasiliensis*, a species only known to us from South Brazil.]

3. **Selaginella chilensis,** Spring, Monogr. Lycopod. ii. p. 141; Bak. in Journ. Bot. 1885, p. 22.

Lycopodium chilense, Willd.; Presl, Reliq. Hænk. i. p. 79.

Mexico (*Hœnke* ex Presl).—Peru; Chili.

Baker suggests that this may be conspecific with *S. canaliculata*, Bak., a species having a wide range in Tropical Asia and Polynesia.

4. **Selaginella convoluta,** Spring, Monogr. Lycopod. ii. p. 69; Bak. in Journ. Bot. 1884, p. 376.

Guatemala, Motagua valley (*Godman & Salvin*).—Colombia to Guiana and Brazil. Hb. Kew.

Baker records this from Mexico, no doubt by mistake, as Guatemala seems to be its northern limit.

5. **Selaginella cuspidata,** Link, Fil. Hort. Berol. p. 158; Fourn. Mex. Pl. Enum. i. p. 146; Bak. in Journ. Bot. 1885, p. 19; Eaton in Proc. Am. Acad. xviii. p. 189.

Selaginella incana, Spring, Monogr. Lycopod. ii. p. 157.
Selaginella sulcangula, Spring, loc. cit. p. 163.
Selaginella densifolia, S. pallescens, et *S. reticulata,* Klotzsch, teste Baker.
Lycopodium circinale, Ch. et Schl. in Linnæa, v. p. 622; Mart. et Gal. Foug. Mex. p. 10.

North Mexico, Soledad, Coahuila (*Palmer*, 1441), San Miguelito mountains, San Luis Potosi (*Schaffner*, 934); South Mexico, Mirador (*Liebmann*); Guatemala (*Skinner*); Nicaragua, Realejo (*Sinclair*).—Venezuela; Colombia. Hb. Kew.

6. **Selaginella diffusa,** Spring, Monogr. Lycopod. ii. p. 104; Bak. in Journ. Bot. 1884, p. 26.

Lycopodium diffusum, Presl, Reliq. Hænk. i. p. 78.

Panama (*Hœnke*), near the city of Panama (*Seemann*, 31). Hb. Kew.

7. **Selaginella erythropus,** Spring, Monogr. Lycopod. ii. p. 155; Bak. in Journ. Bot. 1885, p. 118.

Lycopodium erythropus, Mart. Ic. Sel. Pl. Crypt. Bras. p. 39, t. 20. fig. 3.

Guatemala, Yzabal and Sierra del Mica (*Bernoulli & Cario*, 164, 165; *Bernoulli*, 943), Yzabal (*Salvin & Godman*; *Skinner*: *β. major*).—West Indies to Chili and South Brazil. Hb. Kew.

8. **Selaginella eurynota,** A. Braun in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 377; Bak. in Journ. Bot. 1884, p. 26.

Guatemala, Coban (*Türckheim*), Mazatenango (*Bernoulli*, 33); Costa Rica, Aguacate (*Hoffmann*); Panama, Empire Station (*S. Hayes*, 228). Hb. Kew.

9. **Selaginella exaltata,** Spring, Monogr. Lycopod. ii. p. 145; Bak. in Journ. Bot. 1885, p. 23.

Lycopodium exaltatum, Kunze, Syn. in Linnæa, ix. p. 8.

Panama, Obispo Falls (*S. Hayes*, 251). Southward to Peru. Hb. Kew.

A climbing species, often, according to Poeppig, reaching a height of fifty or sixty feet.

10. **Selaginella faucium,** Liebm. ex Fourn. Mex. Pl. Enum. i. p. 148; Bak. in Journ. Bot. 1883, p. 333.

South Mexico, Huitamalco and Hacienda de Jovo (*Liebmann*). Hb. Kew.

11. **Selaginella fendleri,** Bak. in Journ. Bot. 1883, p. 334.

Panama, Chagres (*Fendler*, 382). Hb. Kew.

12. **Selaginella flabellata,** Spring, Monogr. Lycopod. ii. p. 174; Bak. in Journ. Bot. 1885, p. 47.

Selaginella undulata, Liebm. in Vidensk. Meddel. 1847; Fourn. Mex. Pl. Enum. i. p. 148.

Selaginella subsplendens, Presl in Abhandl. Bœhm. Ges. Wiss. iii. p. 582; Spring, loc. cit. p. 263 (species propria).

Lycopodium flabellatum, Linn. Sp. Pl. ed. i. p. 1105.

Lycopodium gracile, Desv. et *L. microstachyum,* Desv. ex Spring.

South Mexico, Yecoatla (*Liebmann*), valley of Cordova (*Bourgeau*, 1655 bis), Chiapas &c. (*Ghiesbreght*, 606); Panama, Veraguas (*Bridges*).—Tropical and Subtropical regions of Asia, Polynesia, and America. Hb. Kew.

Fournier refers Bourgeau's 1655 bis to *S. stellata,* Spring, which Baker treats as a variety of *S. parkeri,* Spring, a common species in the northern parts of South America.

13. **Selaginella galeotti,** Spring, Monogr. Lycopod. ii. p. 220; Bak. in Journ. Bot. 1884, p. 297; Fourn. Mex. Pl. Enum. i. p. 147, cum var. *β.*

Selaginella vexata, Liebm. teste Fourn. loc. cit. var. *β.*

Selaginella suavis, Klotzsch in Linnæa, xviii. p. 521, non Spring.

Lycopodium stoloniferum, Mart. et Gal. (non. Swartz), et *L. fruticulosum,* Mart. et Gal. (non Bory), Foug. Mex. pp. 11 et 12.

Selaginella pœppigiana, β. mexicana, Spring, Monogr. p. 218, teste Baker.

Lycopodium stoloniferum, Ch. et Schl. in Linnæa, v. p. 622, non Swartz.

South Mexico, valley of Cordova (*Bourgeau*, 1425, 1655, 2025), Colipa (*Liebmann*), Cordillera of Vera Cruz (*Galeotti*, 6606), Mirador (*Linden*, 85), Santa Maria, Tlapacoya (*Liebmann*); Guatemala, Coban (*Godman & Salvin*). Hb. Kew.

Baker states that he does not think that Spring's Panama and Bolivian plants referred here belong to this species.

14. **Selaginella geniculata,** Spring, Monogr. Lycopod. ii. p. 227; Bak. in Journ. Bot. 1885, p. 121.

Selaginella ferruminata, Spring, *S. conduplicata,* Spring, et *S. tomentosa,* Spring ex Bak.
Lycopodium geniculatum, Presl, Reliq. Hænk. i. p. 80.

Nicaragua, Chontales (*Seemann*, 234; *Tate*); Panama (*Sinclair; Seemann*), Chagres (*Fendler*, 383).—Southward to the Amazons Valley and Peru. Hb. Kew.

15. **Selaginella guatemalensis,** Bak. in Journ. Bot. 1883, p. 243. (Tab. CIX. B. figg. 47.)

Guatemala, Choctum (*Godman & Salvin*); Nicaragua, Chontales (*Tate*). Hb. Kew.

16. **Selaginella homaliæ,** A. Braun in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 358, in nota; Bak. in Journ. Bot. 1883, p. 212; Fourn. Mex. Pl. Enum. i. p. 148.

South Mexico, in the valley of Cordova (*Bourgeau*, 2023).—Upper Amazons.

The Mexican locality is given on the authority of Fournier, as Bourgeau's 2023 does not appear to be in the Kew Herbarium.

17. **Selaginella incurvata,** Bak. in Journ. Bot. 1883, p. 99.

Selaginella vaginata, Liebm. teste Baker.

South Mexico, Hacienda de Santa Barbara, Vera Cruz (*Liebmann*). Hb. Kew.

18. **Selaginella lepidophylla,** Spring, Monogr. Lycopod. ii. p. 72; Bak. in Journ. Bot. 1884, p. 376; Eaton in Proc. Am. Acad. xviii. p. 189; Fourn. Mex. Pl. Enum. i. p. 146.

Lycopodium lepidophyllum, Hook, Ic. Pl. tt. 162, 163.

Texas.—North Mexico, Soledad, Coahuila, and Monterey, Nuevo Leon (*Palmer*, 1439, 1440), Escobrillos mountains, San Luis Potosi (*Schaffner*, 935); South Mexico, Cuernavaca (*Schmitz*). Southward to Peru. Hb. Kew.

19. **Selaginella lindeni,** Spring, Monogr. Lycopod. ii. p. 118; Bak. in Journ. Bot. 1883, p. 84; Fourn. Mex. Pl. Enum. i. p. 148.

South Mexico, Teapa (*Linden*, 1592). Hb. Kew.

20. **Selaginella lynchuchus,** Spring, Monogr. Lycopod. ii. p. 247; Bak. in Journ. Bot. 1885, p. 294.

Guatemala, Volcan de Fuego (*Godman & Salvin*, 109), Chilion near Mazatenango (*Bernoulli*, 472).—Venezuela. Hb. Kew.

21. **Selaginella martensii,** Spring, Monogr. Lycopod. ii. p. 129; Bak. in Journ. Bot. 1884, p. 296; Fourn. Mex. Pl. Enum. i. p. 147.

Selaginella pœppigiana, Hook. Fil. Exot. t. 56, non Spring.
Lycopodium flabellatum, Mart. et Gal. Foug. Mex. p. 11, non Linn.

South Mexico, Sierra San Pedro Nolasco &c. (*Jurgensen*, 527), valley of Cordova (*Bourgeau*, 1655, 2275), without locality (*Graham*). Hb. Kew.

22. **Selaginella microphylla,** Spring, Monogr. Lycopod. ii. p. 88; Bak. in Journ. Bot. 1883, p. 83.

Selaginella thujæfolia, Spring in Mart. Fl. Bras. i. p. 120.

Lycopodium microphyllum, H. B. K. Nov. Gen. et Sp. i. p. 39.

Guatemala, between Barbasco and Gualan (*Bernoulli,* 955).—Colombia to Ecuador and Brazil. Hb. Kew.

23. **Selaginella nicaraguensis,** Bak. in Journ. Bot. 1883, p. 333. (Tab. CIX. A. figg. 1–3.)

Nicaragua, around Granada (*Lévy,* 360). Hb. Kew.

24. **Selaginella oaxacana,** Spring, Monogr. Lycopod. ii. p. 177; Bak. in Journ. Bot. 1885, p. 119; Fourn. Mex. Pl. Enum. i. p. 147.

South Mexico, Oaxaca (*Galeotti,* 6808 bis), Chiapas &c. (*Ghiesbreght,* 602). Hb. Kew.

25. **Selaginella pilifera,** A. Braun in Ind. Sem. Hort. Berol. 1857, App. p. 20; Bak. in Journ. Bot. 1884, p. 376; Fourn. Mex. Pl. Enum. i. p. 146.

Texas.—North Mexico, region of San Luis Potosi (*Parry & Palmer,* 1008). Hb. Kew.

26. **Selaginella porelloides,** Spring, Monogr. Lycopod. ii. p. 97; Fée, Fil. Ant. p. 133, t. 34. fig. 3; Bak. in Journ. Bot. 1884, p. 373.

Mexico (*Schaffner* ex Fée). West Indies.

27. **Selaginella puberula,** Klotzsch in Linnæa, xviii. p. 522; Spring, Monogr. Lycopod. ii. p. 165; Bak. in Journ. Bot. 1885, p. 117.

Guatemala, Mazatenango (*Bernoulli,* 38).—Peru; Guiana. Hb. Kew.

28. **Selaginella pulcherrima,** Liebm. in Vidensk. Meddel. 1847; Fourn. Mex. Pl. Enum. i. p. 147; Bak. in Journ. Bot. 1885, p. 117.

South Mexico, Hacienda de Jovo (*Liebmann*). Hb. Kew.

29. **Selaginella radiata,** Bak. in Journ. Bot. 1884, p. 374.

Selaginella increscentifolia, Spring, Monogr. Lycopod. ii. p. 106.

A. ciliata, A. Braun in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 359.

Costa Rica, Aguacate (*Hoffmann*).—Colombia to Peru and Guiana. Hb. Kew.

30. **Selaginella rhizophora,** Bak. in Journ. Bot. 1884, p. 244.

Panama, near San Juan and Panama (*Seemann,* 29, 32). Hb. Kew.

31. **Selaginella rupestris,** Spring, in Fl. Bras. i. p. 118; Monogr. Lycopod. ii. p. 55; Bak. in Journ. Bot. 1883, p. 43; Fourn. Mex. Pl. Enum. i. p. 146; Eaton in Proc. Am. Acad. xviii. p. 189; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 675.

Canada southward through the Eastern States.—North Mexico, mountains near San Luis Potosi (*Schaffner,* 933); South Mexico, Tlacolola, Oaxaca (*Andrieux,* 47), Mirador (*Liebmann*), Guadalupe and Pedregal, valley of Mexico (*Schmitz; Hahn,* 248;

Schaffner), Orizaba (*Bourgeau*, 2541). North and South Temperate Zones, and mountains within the Tropics in America and Asia. The most widely diffused species of the genus. Hb. Kew.

32. **Selaginella saccharata,** A. Braun in Tr. et Planch. Fl. Nov. Gran., Crypt. p. 356, in adnot.; Bak. in Journ. Bot. 1883, p. 142; Eaton in Proc. Am. Acad. xviii. p. 189; Fourn. Mex. Pl. Enum. i. p. 148, var. *α. major* et *β. minor*.

Selaginella sanguinolenta, Liebm., non Spring, et. *S. spirillum,* Liebm. ex Fourn.

North Mexico, San Rafael mountains (*Schaffner*); South Mexico, valley of Cordova (*Bourgeau*, 1426 bis), region of Orizaba (*Bilimek*, 484; *Müller*, 737, 367), Dos Puentes and Misantla (*Liebmann*). Hb. Kew.

33. **Selaginella schiedeana,** A. Braun in Ann. Sc. Nat. série 4, xiii. p. 62; Bak. in Journ. Bot. 1883, p. 142.

Selaginella fimbriata, Liebm. in Vidensk. Meddel. 1847, non Spring.

Selaginella liebmanni, Fourn. Mex. Pl. Enum. i. p. 148.

Selaginella serpens, Spring, Monogr. Lycopod. ii. p. 102, quoad plantam Mexicanam.

Lycopodium serpens, Ch. et. Schl. in Linnæa, v. p. 622, non Desv.

South Mexico, Colipa and Papantla (*Liebmann*), Chiapas &c. (*Ghiesbreght*, 603, 604). Hb. Kew.

34. **Selaginella schizobasis,** Bak. in. Journ. Bot. 1883, p. 333.

South Mexico, Chiapas &c. (*Ghiesbreght*, 605). Hb. Kew.

35. **Selaginella sertata,** Spring, Monogr. Lycopod. ii. p. 104; Bak. in Journ. Bot. 1883, p. 142.

Panama (*Sinclair*). Hb. Kew.

36. **Selaginella stenophylla,** A. Braun in Ann. Sc. Nat. série 4, xiii. p. 83; Bak. in Journ. Bot. 1885, p. 295.

Selaginella lychnuchus, Fourn. Mex. Pl. Enum. i. p. 148, non Spring.

Selaginella macroura, Liebm. ex Fourn.

South Mexico, Misantla (*Liebmann*), valley of Cordova (*Bourgeau,* 1654, 2156). Hb. Kew.

37. **Selaginella viticulosa,** Klotzsch in Linnæa, xviii. p. 524; Bak. in Journ. Bot. 1885, p. 118.

Panama, Santiago de Veraguas (*Seemann*, 28), Chagres (*Sinclair*).—Venezuela. Hb. Kew.

Order CLXV. RHIZOCARPEÆ.

Besides the following genera this Order contains only one other, namely, *Pilularia*, of which there are half a dozen species inhabiting Europe, North Africa, Australia, New Zealand, and North and South America. There are two species in America,

both endemic, one of which has been found in Arkansas and Chili, and the other only in Bolivia; but being very obscure plants, they are doubtless often overlooked or neglected by collectors. The Order consists entirely of aquatic and subaquatic plants.

1. SALVINIA.

Salvinia, Micheli, Nov. Pl. Gen. (1729) p. 107, t. 58, ex Pfeiff. Nomencl. Bot. ii. p. 1030.

A genus of about half a dozen species very widely spread in both hemispheres, though not known in America north of Mexico.

1. **Salvinia auriculata,** Aubl. Pl. Guian. ii. t. 367; Mart. Fl. Bras. i. p. 655, t. 81. figg. 9, 10; Fourn. Mex. Pl. Enum. i. p. 143.
Salvinia rotundifolia, Willd. Sp. Pl. v. p. 537; Ch. et Schl. in Linnæa, v. p. 622.
Salvinia hispida, H. B. K. Nov. Gen. et Sp. i. p. 44.

South Mexico, Tampico (ex *Fournier*); Nicaragua, in many localities near Granada (*Lévy*, 230).—Southward to Peru and Brazil, and in the West Indies.

2. AZOLLA.

Azolla, Lam.; Strasburger, Ueber *Azolla*, p. 76.

Four species spread over America, Asia, Africa, and Australia. Besides the following there is one other species (*A. filiculoides*, Lam.) in America; and it is widely spread in South America, ranging from Colombia to Patagonia; it is also recorded by Strasburger from California, though it is not included in Watson's 'Botany of California.'

1. **Azolla caroliniana,** Willd. Sp. Pl. v. p. 541; Mett. in Linnæa, xx. p. 278, t. 3. fig. 9; Mart. Fl. Bras. i. p. 659, t. 82. figs. 1–6; Strasb. *Azolla*, p. 78, t. 7. figg. 112 *a* et *b*; S. Wats. Bot. Calif. ii. p. 352; A. Gr. Man. Bot. Northern U. S. ed. 5, p. 678; Fourn. Mex. Pl. Enum. i. p. 143.
Azolla mexicana, Ch. et Schl. in Linnæa, v. p. 625.

New York and Illinois to Texas and California.—South Mexico, Ingenio, Sierra de la Cruz (*Müller*, 136), between Serpillo and Estero (*Schiede & Deppe*), near Mexico (*Bourgeau*, 65).—Colombia to Guiana and Brazil, and in the West Indies.

3. MARSILIA.

Marsilia, Linn.; A. Braun in Monatsb. Königl. Akad. Wiss. Berlin, Aug. 1870, p. 713.

This genus is even more generally diffused than the foregoing, covering the same range and the southern half of Europe in addition, and it is much more numerous in species: Braun enumerates upwards of fifty.

1. **Marsilia mexicana,** A. Braun in Monatsb. 1870, p. 747; Fourn. Mex. Pl. Enum. i. p. 143.

South Mexico, Jalisco (*Beechey*), Chapultepec (*Schaffner*). Hb. Kew.

2. **Marsilia minuta,** Fourn. in Bull. Soc. Bot. France, xxvii. p. 329.

North Mexico, around the city of San Luis Potosi (*Schaffner*, 90).

With this, according to Fournier, Schaffner sent *M. brevipes*, Nutt., which Braun refers to his *M. mucronata*.

3. **Marsilia polycarpa,** Hook. et Grev. Ic. Fil. t. 160; A. Braun in Monatsb. 1863, p. 417 et 1870, p. 722.

Marsilia picta, Fée, 9e Mém. Foug. p. 47; Fourn. Mex. Pl. Enum. i. p. 143 (species propria).

South Mexico, around Mexico (*Hahn*); Panama, between Nata and Anton (*Seemann*, 30), without locality (*S. Hayes*, 626).—Cuba to the Argentine Republic and in Polynesia. Hb. Kew.